VOLUME 45 • NUMBER 269 • *December 1961*

The Bulletin

OF THE NATIONAL ASSOCIATION OF THE SECONDARY-SCHOOL PRINCIPALS

Phases of Supervision in the Secondary School

SERVICE ORGAN FOR AMERICAN SECONDARY SCHOOLS

THE CONTENTS OF THIS BULLETIN ARE LISTED IN "EDUCATION INDEX"

Second-class postage paid at Washington, D. C. and at additional mailing offices

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THOSE of you who attended the NASSP Convention in Detroit last February will remember the announcement at the business meeting that some changes would be made in our publications. This issue of the NASSP BULLETIN contains one of the changes—a new cover of white stock with the front cover attractively designed and printed in blue ink. Other changes will appear in the January 1962 and succeeding issues. Here you will find new type faces used in the titles of the articles and in the text, larger type, shorter lines, and more white space. We hope that you will like this new look and that you will find it easier reading.

Likewise, the 4-page NASSP NEWS LETTER, which previously was sent only to state association officers and committee members, is now being sent five times a year to all members of the Association. This publication attempts to keep you informed about the activities of your association.

A Publication Committee has been appointed by the Executive Committee. This committee is composed of

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This committee held it first meeting in Washington, November 20 and 21, 1961. Out of this meeting has come additional suggestions.

These and others changes to come later have been made possible through the increase in dues. We are anxious to get your reactions to these changes and also your suggestions for the continued improvement of our publications.—Walter E. Hess, Editor

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Issued Monthly, September to May Inclusive

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Principals Comment on a Program for the Acceleration of Superior High School Students

JOSEPH R. BAXTER
REGINALD L. JONES

Background

A PROGRAM[1] was initiated at Miami University in 1958 which permitted recommended high-school students of superior mental ability and academic achievement to enroll in one or more college courses, either during the summer between their junior and senior years of high school or during the senior year of high school.

In presenting the program to school officials, university representatives pointed out that certain recent studies, notably that of the Early Admission to College program[2], had demonstrated that well-motivated students of high academic ability and of the ages of high-school juniors and seniors were perfectly capable of pursuing college level studies. It was noted, however, that problems of social adjustment had been reported for some of these students, stemming chiefly from the age differential, and that principals and parents often object to a plan which results in students of fifteen and sixteen years of age leaving home for the college environment. The Miami plan, it was explained, overcame these objections by admitting secondary-school students of high ability while permitting them to remain in high school for the conventional period of time.

The following requirements were adopted for admission to the program: (1) the student must rank scholastically in the upper one fourth of his high-school class; (2) he must place in the upper one fourth of college aptitude tests to be administered by Miami University; and (3) he must be recommended by his principal as possessing superior academic potential.

Upon admission to the program, and upon completion of the junior year of high school, the student had several options. If within commuting distance, he might enroll in regular campus courses. During the summer, he could either commute or live on campus in university residence halls.

[1] This research was supported by The Fund for the Advancement of Education.

[2] The Fund for the Advancement of Education. *They Went to College Early.* New York: The Fund for the Advancement of Education. 1957.

Joseph R. Baxter is Coordinator of the University Study Program for Superior High-School Students, and Reginald L. Jones is Research Assistant Professor, Miami University, Oxford, Ohio.

During the academic year, he could enroll in certain courses to be offered in the academic centers, or in some instances, in selected high schools outside these centers. The credits earned were declared to be transferable and, although it was explained that this could not be guaranteed, a special letter explaining the program would accompany each transcript sent to other institutions.

Since a student may register for a full load (12 credit hours for the two sessions) in the summer following completion of his junior year, and may enroll for one or more college courses in combination with his high-school studies during his senior year, it will readily be seen that a student desiring to "accelerate" his educational career may earn thirty or more hours prior to his entrance upon regular, full-time college work.

Launching the Program

The first communications describing the program were sent to high-school officials in March 1958. More detailed information followed, and during April and May the first groups of prospective applicants were tested for admission in several Miami University Centers.

Contacts with school principals and superintendents were intensified in the fall and early winter months by means of letters, bulletins, visits by staff members, and especially a series of six luncheon meetings held in five strategic locations. Some 79 separate schools were represented in these meetings, with approximately 120 persons in attendance. The general philosophy of the program was discussed and school men were given the opportunity to raise questions and offer comments. Both here and in a follow-up letter to those meetings it was emphasized that, to be successful, the program must become a *cooperative* venture, and not simply a Miami University program. Miami, it was pointed out, had already accepted certain commitments, and it was suggested that school officials must accept similar obligations, which were defined as follows: (1) an acceptance of the general philosophy of the program; (2) the development of a related guidance program at the freshman and sophomore levels of the high-school and, if feasible, at the junior high-school level; and (3) the willingness to participate in the planning and development of the program.

The above letter was accompanied by a "declaration of intent" form which principals were asked to fill out and return if they wished their schools to be included in the list of cooperating schools. By February 1959, more than forty schools had returned the completed forms. It is interesting to note here that in indicating their acceptance of the philosophy of the program, principals were invited to state any exceptions or qualifications; none did.

Questionnaire to Principals

The data in this article were obtained chiefly from a questionnaire sent to principals of cooperating high schools in the spring of 1961. The respondents numbered 30 out of a possible 47.

Since the responses showed a tendency to combine certain questions in practice, the eight questions asked may be reduced to six for convenience:

1. What do you see as major values, or advantages, of Miami University's Study Program for Superior High School Students? What disadvantages?
2. Have your views changed, as a result of your experience with the program, on (a) the general question of "acceleration" of high-ability students; and (b) the effectiveness of the Study Program in meeting the needs of such students?
3. What do you see as the role of the principal in implementing a program of this kind?
4. What reactions have you had from parents concerning the program? From the board of education? From others?
5. Do you have the CEEB Advanced Placement Program in your school? If so, since when? In what subject areas?
6. What recommendations do you have for possible improvement of the Study Program?

Advantages of the Study Program

The major values, or advantages, seen in the Study Program were principally the following: it provides an economical way of earning college credits; it is a means of "recognizing and promoting" the able student; it familiarizes the student with college standards and hence makes for a "smoother transition" from high school to college; it provides a challenge or stimulus to able students; it gives the better student a "head start" on his college career; and it provides "an opportunity for students of small high schools to take advanced work."

These points were, of course, stated in different ways and with varying emphases. One principal summarized the "advantages" of the program thus: "(a) Preview of 'college-type' teaching and college-course requirements. (b) Partially answers current demand to accelerate or enrich programs of better pupils." An interesting variation, if not altogether clear, was this: "The program supplies a need for those students who have exhausted the course offerings of most of our secondary schools." If the reference is to *number* of course offerings, this is certainly at variance with the philosophy which originally inspired the Study Program, which holds that the main question is quality, in the sense of more advanced study, not quantity. (In fairness, it should be added that the same principal mentioned additional advantages quite in line with those listed above.) Moreover, some stated no advantages at all.

The advantage noted above for "students of small high schools" deserves special comment, inasmuch as providing opportunities for such students was an outstanding consideration in the mind of at least one of the original proponents of the Study Program. Has the program served this objective? The principal who called attention to the program's potential value in this regard added, "We have been unable to interest any of our students to participate." Two other very small schools enrolled two students each in the program. The principal of the one school observed

that his students had "failed to obtain any real degree of success in the courses taken"; the other principal was gratified with his students' experiences: "We felt it helped them to become acclimated to the Miami setup—especially since they were from a small high school." Moreover, both the school and the community applauded.

The Problem of Enrollment

The question, as actually presented in the questionnaire, had to do with "problems" encountered in implementing the program at the local level. A phrase such as, "No particular problem," was a fairly common response. On the other hand, even those schools remaining, on the whole, favorable to the program frequently offered qualifying comments.

A number of the replies centered on the difficulty of getting students interested in enrolling in the college courses available to them. The explanations for this were varied, however. Some examples follow:

> The better students who might be interested are already engaged in a full load of high-school classes as well as extracurricular activities.
>
> Our students do not want to enroll in evening classes. They are afraid that additional work will affect their class rank. Our most able students academically are also the ones who carry the extracurricular load.
>
> We seem to offer enough within our own school so that very few have finished with all they wish to take here in order to enter your regular program during the year.

Another high school reported, in a communication other than the questionnaire whose results are here being analyzed: "Six of the seven eligible pupils . . . did not enroll because they are enrolled in either accelerated English or mathematics and felt that they could not carry a college freshman course in addition. Two other pupils did enroll on the campus during the summer of 1959. Both were enthusiastic about their experience and earned credit."

Other explanations given for failure of qualified pupils to enroll in college courses tended to parallel those given by the students themselves. These included limited finances, the desire of students to hold after-school jobs, inconvenient times and places at which the courses were scheduled, and the limited course offerings available in a given community. While recognizing the weight of such factors in individual cases, the Study Program staff is inclined to feel that the last two factors in particular do not have an over-riding significance in the over-all picture. For one thing, whenever these reasons for not enrolling appeared in students' questionnaires, they were commonly accompanied by other reasons as well. Second, quite low enrollments in relation to numbers qualified were to be found precisely in some classes which seemed very conveniently scheduled, as in the high-school building and either during or immediately after school hours. (This was true in at least two instances; it was definitely not true in two others.)

The multiplicity of answers given by both students and principals on this point, together with certain informal data, would suggest that pos-

sibly some of the real reasons for qualified students not enrolling under the Study Program may be other than the ones commonly given. One such explanation is hinted in the statement of a principal who, for the rest, expressed a certain degree of puzzlement: "I might mention that these students are still high-school students, and the senior year in high school is one of particular delight because of the many activities which surround them. Along with this, many students feel they would be sacrificing, to an extent, the glamour, the fun, the social life of a year on campus. This, to adults, may seem insignificant—but it is a very real thing to students of this age."

A very similar point of view was expressed by an instructor who had taught a number of field courses under the program. Emphasizing the importance which these students, in common with others, attach to their senior year of high school with all of its activities and glitter, he added that "they find it exceedingly difficult to lift themselves out of the high-school atmosphere at the end of the day to participate in a college-level course." Thus it would seem that high-school students, even those of very high academic ability, are reluctant to do anything which would mark them off from their "peers." On the other hand, experience would suggest that the whole atmosphere or "climate" of the individual high school is a large factor; thus, in those schools (and communities) where academic excellence is prized, the opportunity to participate in some form of advanced study is more likely to be seized upon by students.

Two other points of possible relevance may be advanced here, although they are intended as merely suggestive. One of these, suggested by an experienced instructor, is that for many high-school principals there is a certain "remoteness" about a program such as this, originating with and "directed" by a university. Thus, with the best good will, in view of all the specifically "high-school" duties and activities which claim their attention, school officials find it enormously difficult to give such a program the attention and direction which university people might be inclined to expect of them (and which may in fact be necessary to make the program a genuine success). (If this point has some merit, it might suggest a certain advantage to the CEEB Advanced Placement Program, which, by placing responsibility more directly on the high school, might claim greater immediacy.) The other point, which has some presumptive support in experience, is that both students and officials of a given school sometimes oppose a silent resistance to any arrangement involving the use of some other school, especially if the other school can be considered in any way a rival; hence a "neutral" location is probably preferable in the scheduling of classes.

Other Disadvantages of the Program

Most of the problems, or "disadvantages," mentioned by principals have already been treated, as ancillary to the crucial problem of enrollment: "restricted offerings of courses," the relative unsuccess of some students,

and the like. Two responses developing other more or less adverse points seem worth quoting, especially since they come from schools which have had a particularly strong participation in the Study Program.

(a) Conflict in time. Some pupils have divided loyalty and sacrifice some part of either the high-school program or the college course.

(b) Because some of our students got high grades in the summer program, with "relatively little work" (I do not believe these students, but our other seniors do), they now feel college is a 'breeze' and they have an adverse effect upon our ability to stimulate other youngsters to work while still in high school. This does *not* apply to the course taught here (at this high school).

• • • • •

We have had a small amount of criticism from a few teachers who have felt certain students took advantage of the added freedom. . . .

There have been very few students who developed a strong notion they were university rather than high-school students—this has caused some slight dissension at times.

I have some reservation about some of our students taking freshman English instead of our senior English.

Have Principals' Views Changed?

There were really two questions on this point, it will be recalled, designed to ascertain whether the principals' experience with the program had in any way affected their attitudes on (a) acceleration in general, and (b) the Study Program in particular.

On "acceleration" as a general principle, most principals reported their views had not changed. Four, however, indicated they had become more favorable; three, that they were now less favorable. (One school indicated that participation in the Superior and Talented Student Project of the North Central Association had also helped to change "our thinking on acceleration.") One principal who remained very favorable to the program questioned whether "acceleration" was the point at issue, for though he did not explicitly object to acceleration, he felt that the chief asset to the student was "freedom from dull, elementary courses—not early graduation." The three following responses on whether principals have changed their minds about acceleration are suggestive:

Yes. We (now) believe that students should not be denied the experiences attendant to the many activities of the high school. Certainly he cannot work on the Yearbook or the school paper or participate in athletics and carry college-level courses in addition to his high-school academic program.

Somewhat perhaps. We are inclined to believe that acceleration should be done in high school—in high-school subjects only—enrichment, advanced work.

The only change—there should be more and varied opportunities for acceleration of high-ability students.

Some schools favorable to "acceleration," however, felt that this might as well or better be accomplished in some other way, such as the Advanced Placement Program. One principal even felt that graduating high-ability students in three years was feasible, provided they were

willing to do some summer work: "We have done this and will continue to do so for those who meet the requirements." But here is an evidently adverse reply: "Most of these students are self-centered and not too well developed socially." By contrast, the school head quoted below had become *more* favorable to the Study Program: "Yes—in the small comprehensive high school, we cannot meet the needs of the few superior students without help from such [an] institution as Miami or sister high schools."

Role of the Principal in Implementing the Program

To the question, "What do you see as the role of the principal in implementing a program of this kind?" a surprisingly wide variety of answers were forthcoming. Interesting and fairly typical was the response of one principal who saw his duties in this connection as threefold: (a) organizer, (b) prodder, and (c) helping to maintain interest and continuity. Another commented forthrightly: "Of course, if the program is to be effective, the principal must make it go." Still another defined the principal's chief responsibility as "cooperating with the university to insure involvement of the right people." Other commonly suggested functions were early identification of superior students and encouraging their participation; counseling with parents on both the academic and financial considerations involved; providing schedules "with a minimum of conflict"; and giving publicity to the program.

However, there were interesting variations on these themes. It was evident, for example, in the responses of some principals that their enthusiasm for the Study Program had cooled considerably, witness these two estimates of their role:

> Explanation of the advantages and disadvantages to those pupils who have an interest in such a program.
>
> It is important that the principal caution those he feels unprepared and look for those he feels the challenge will help, not hinder.

It was in replying to this question, moreover, that one principal revealed what evidently had long been a major bugbear for him; namely, to "Sell program of flexibility to rigidly oriented faculty." One of the most comprehensive answers to the question was the following: "Screening potential students for this program; securing teacher opinion on students; counseling as regards articulation and keeping emotional and scholastic balance of student who is both high-school and college participant. All this should be delegated to guidance people if such are sufficient in the high school."

Community Reactions

Roughly half the respondents omitted the question on the kind of reactions they had had from parents, board of education, or others. Many others repeated previously expressed sentiments. A few illustrations will suffice:

Most parents are favorable. The Board of Education is favorable. Many others in the community feel that the program should be encouraged and extended.

Parents good. Board of Education not much comment—others not too good.

Just general interest and appreciation. A few complaints that we're working pupils too hard, but I feel they would complain about our high-school courses the same way.

Teachers in our building have indicated that the program serves a need for those students who should be challenged and who, once getting a taste of college work, are less likely to terminate their education.

CEEB Avanced Placement

Seven schools indicated that they had Advanced Placement. The subject areas represented were English, American History, Chemistry, French, Mathematics, and Biology. Few mentioned the dates when the Advanced Placement Program courses were instituted, but informal data suggest that, in several instances, it came after the inauguration of Miami's Study Program. Whether the Miami program provided an indirect stimulus in this matter is not known. It is known, however, that one large high school decided quite early (April 1959), after a meeting with parents in which the matter was thrashed out, to drop its Study Program affiliation in favor of the CEEB Advanced Placement Program.

Recommendations for Improvement

Principals' recommendations for improving the Study Program were many and varied. In general, they followed lines already marked out in answering earlier parts of the questionnaire, although some new points of interest were raised. Very often the suggestions reflected situational factors, in that school officials tended to recommend changes in the particular efforts being made to implement the program in their communities; *e.g.*, instituting a different course (English rather than history, or *vice versa*, or courses more closely allied with engineering), scheduling the course at a different hour, offering summer work in the local high school, *et cetera*. Several principals thought that there should be a greater diversity of course offerings in the local communities. One, however, felt that *any* college-level course would be acceptable since the main object was to provide a challenge for the abler students. Several respondents mentioned the need for closer liaison between the University and the high schools.

The range and tenor of the recommendations may be further gauged from the following illustrations:

Provide an occasional scholarship to a worthy student interested in the program but unable to afford the fee.

Anticipate registration a year in advance so course can be part of regular registration.

Perhaps an offering of non-credit pre-college courses as English writing and usage, reading skills, vocabulary studies, vocational goals, or plans course.

That the University Study Program should be moved directly to some of the high schools having the advanced placement program. [This from a school which has been somewhat disappointed with the CEEB test results of its Advanced Placement students.]

Should emphasize willingness to dovetail with the high-school program. For instance, we now need *any* course to challenge able students. . . . In two years we will have the more specific need of providing a mathematics course to be taken by seniors who have been accelerated in mathematics and will be ready for a college-level mathematics course their senior year.

Departmental Organization for Better Instruction

CLAUDE E. STEPHENSON

DEPARTMENTAL organization exists for the improvement of the quality of classroom instruction. Apart from this, it has no place in educational administration. Good departmental organization has several by-products: better communications, more inspired teaching, happier personnel, and a more cohesive work-group. But its primary purpose is to provide the students with a better educational program. Several roles become readily apparent in a study of this nature: the role of the administrator, the role of the department head, and the roles of each of the teachers.

The Role of the Administrator

The primary job of the administrator in providing good departmental organization is choosing the departmental heads. There are several ways for him to do this: by popular election, as a reward for long service, or by appointment of persons highly qualified for the job. All of these methods are found in practice; however, only the latter is recommended. The first of these methods, popular election, has several drawbacks.[1]

The elected department head finds himself beset with many problems. He does not have the confidence of the principal, since the administrator had nothing to do with choosing him. He may not have the special

[1] Elizabeth S. Jensen, "The Department Chairman: Why He Often Quits with Pleasure," *Clearing House*, Volume 23, January 1949, pp. 284-286.

This article was written by Claude E. Stephenson, 6542 Balsom Avenue, Reseda, California, to discover the ingredients of good departmental organization, to present a plan for departmental organization, and to determine what should be of chief concern to the department head in relation to curriculum improvement and supervision. There has been no attempt to report the various experiments and trends which are found in some communities to replace the department head with another title. Rather this article is an attempt to show what departmental organization ought to be.

qualifications necessary for his new role. He has no real status. His staff members do not look upon him as an instructional leader. He has no clearly defined responsibilities, and he tends to be the recipient of much routine clerical work. Lacking administrative support, he is rarely consulted about matters within the department, revision of policies for programming, or teacher preferences for subject assignments.[2] It is obvious, therefore, that such a method of selecting a department leader can do little toward improving instruction.

The method of selecting a department head as a reward for longevity of service, hardly bears consideration. Years of service do not necessarily produce an instructional leader. Many qualities such as organizational ability, strong leadership, creativity, and thorough knowledge of the subject field are essential.

Appointment of the department head by the administrator is the most justifiable method of selection. An appointed chairman usually is chosen for his special abilities. He serves with the confidence of the administrator and is answerable directly to him. A discerning administrator should evaluate each prospective appointee for the following qualities: (1) he is a master teacher; (2) he is familiar with each subject taught in his department; (3) he is recognized by members of the department as a leader in curriculum development; (4) he has the ability to work with people; and (5) he has interest in the improvement of the department.

The Organization of the Department

An efficient and useful department depends on good organization. It is the role of the department head to provide the primary departmental leadership. The following is a plan for implementing such a department.

Step 1: Departmental organization begins in the administrative offices with the homogeneous grouping of students according to IQ and reading ability.[3] Each grade level is given a standardized test of reading ability. From the test results, a rank-order listing of each class is established. Appropriate grouping placement is more assured when teachers check these test results against actual student performance.

Step 2: The department head and all members of his department should discuss the problems of organization and possible plans for improving the system. Through these group dynamics, a plan of action can be established.

Step 3: Either volunteers or appointees of the chairman should act as coordinators within the department. The best plan seems to include a coordinator for each grade level, a special reading coordinator, a speech coordinator, an audio-visual coordinator, and a book coordinator.[4]

[2] *Ibid.*

[3] Lorena A. Anderson and Eunice P. Benson, "Organization of an English Department," *The English Journal*, Volume 48, March 1959, pp. 145-7.

[4] *Ibid.*

Step 4: After thorough discussion by all department members, a list of each coordinator's duties should be compiled and copies given to each member. For example, the duties of the reading coordinator might look like this:

—aids in scheduling remedial groups; provides teachers of these groups with their educational background; and aids teachers in coordinating new experiences

—makes materials available to teachers; locates materials of appropriate difficulty level for various classes

—experiments and tests new methods and materials

—arranges for the acceleration of pupils to higher classes

Step 5: Evaluation is an essential part of the department's program. This may be accomplished by questionnaire, informal conversation, or, to some extent, in department meetings. The follow-up and evaluation should include some method of uniformly assessing the effectiveness of the teaching. Two avenues are available: teacher-made departmental tests and standardized tests. Although standardized tests are useful for some purposes, they tend to create fear and anxiety on the part of teachers when used to evaluate their work. Department chairmen interviewed tend to prefer the teacher made examinations over the purchased, standardized tests. They feel there is better teacher acceptance when each teacher contributes to a pool of test items. The appointment of a testing coordinator for the department will facilitate the preparation and editing of these departmental examinations and unit tests.[5]

The Duties of the Department Head

The duties of the department head fall largely into three general areas: planning and coordinating instruction, supervising instruction, and channeling communications.

As a planning coordinator, the department head organizes interesting and useful departmental meetings. Probably, it is wise in a large school to hold these meetings at least three times a month regardless of how many informal meetings are held. Members of the department are thus permitted to air problems, share ideas, pool resources, and develop a team spirit.[6]

The department head maintains an atmosphere of confidence and mutual respect between himself and his coordinators. He clarifies their duties and responsibilities, and helps them find and circulate materials and equipment. With the aid of coordinators and teachers, he develops instruments for evaluating learnings.

[5] Mrs. Ruth Hartley, Chairman of English Department, Verdugo Hills High School, Tujunga, California. In an interview.

[6] Mrs. Sophia Pelzel, Chairman of Social Studies Department, University High School, Los Angeles, California. In an interview, April 5, 1959.

He aids the counselors in making teaching assignments. Since he knows his teachers well, he can help place them in classes where they will be most effective. He also aids in adjusting classes within his department.

Recognizing the importance of providing adequate materials and supplies for his teachers, he supervises the ordering and distributing of books, equipment, and supplies. He provides his department with secretarial help to care for the typing and mimeographing of materials.[7] Without these added burdens, each teacher can spend more time in class preparation and student evaluations.

As a supervisor of instruction, the department head can promote professional growth and exchange of ideas within his department. If he exhibits a genuine interest in helping teachers improve their programs, they will welcome class visits and constructive suggestions. Gruman maintains, however, that the concept of a department head as fulfilling a supervisorial role is not born out by research. In his study of department heads in California schools, many reported they never visited classes and thirty per cent reported they visited only new teachers.[8] However, even without personal class visitations, the department head can improve the quality of education his department offers. He can encourage teachers to visit each other's classes and other schools. He can promote and encourage in-service education projects within the department and/or the school. He can aid in the orientation of new and substitute personnel, and help new teachers develop lesson plans and units of study.

Regardless of his many other duties as supervisor of instruction, the department chairman's first responsibility is to the classes he teaches. It is through his unparalleled teaching here that he becomes recognized as an instructional leader.

A large responsibility of the department head lies in effectively channeling communications between the teachers and the administration. When a department head has the confidence and respect of his administrator, his opinions and suggestions are welcomed. When these avenues of communication are kept open, a better rapport is established between administrators and teachers.[9]

As the voice of his department, he works with other department heads within the school to clarify objectives, problems, and courses of study. Similarly, he may work with department chairmen in his subject field from other schools within the district. Together, curricular problems can be solved, better materials procured, and improved courses of study developed.[10] In many cases, he will also act as the cultural bridge between the community and his teachers.

[7] C. W. Krammer, "Head of Department: Just Try To Find Time for It!" *Clearing House*, Volume 23, September 1948, pp. 5-8.

[8] Allen J. Gruman, "Improving Instruction Through the Use of Department Heads," *California Journal of Secondary Education*, Volume 30, March 1955, pp. 167-9.

[9] Krammer, *op. cit.*

[10] Pelzel, *op. cit.*

Recommendations

Contrary to the demonstration of some research,[11] this writer believes that the job of the department head is and ought to be a very important one. To utilize the resources of this office fully, the following are recommended:

1. That the department chairman be appointed by and be responsible to the principal.
2. That the principal make his appointments after careful study of the candidate's qualities of instructional leadership and organization.
3. That the administrator avoid the pitfall of overloading his department heads with a minutae of insignificant details, causing them to become glorified clerks rather than instructional leaders.
4. That the department head be given a basic list of his duties and responsibilities.
5. That the department head be given a reduced teaching load. This probably should not be reduced below two classes even in the largest high schools, since it is essential for the head of the department to stay close to the problems of teaching.
6. That the department head make full use of coordinators to relieve him of the minutae of detail and give him time for planning and supervising instruction and channeling communications.
7. That the department devise a plan for an over-all evaluation of its teaching effectiveness. This may be through standardized and/or departmental teacher-made tests.
8. That the department head actively participate in promoting in-service education projects such as workshops and demonstrations.
9. That the department head in large schools make use of carefully planned departmental and subject level meetings to improve exchange of ideas and promote professional growth.

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Thoughts on Classroom Observations

ANDREW P. MULLIGAN

PEN and pad in hand I enter a classroom. I bid the time of the day to the teacher and announce the fact that I am going to observe him this period. I receive the plan book and classbook and take a seat in the back of the room.

I know some of the thoughts running through the teacher's mind. . . . "I hope that the class is as responsive as usual." . . . "Why didn't he come in yesterday when the place was really alive?" . . . "What will he say—or write?" . . . and on the thoughts go. Some teachers, even old timers, are nervous; some are unaffected.

The Master Teacher

I look over the plans as the class enters the room. The evaluation begins. I recognize most of the students immediately; their potential is a factor in the type of lesson which will be presented. Routine matters are handled and the class begins. Varied methods, visual-aids, student participation, teacher-student rapport, and a host of other things unfold in this daily process. For forty-two minutes a class and a teacher have carried on an exchange of ideas. The bell sounds and the class is dismissed. I go to the front of the room, speak to the teacher and plan a conference with him. The observation period is complete.

What did I see? What did I learn? In many visits I have seen many things. I have had the exciting experience of seeing the master teacher in action. He handles all routine matters with dispatch. Homework is distributed and assigned as the roll is taken. The class begins. I have read the planned objective and now I see it being realized. He motivates, prods, and stirs imaginations. His purpose is firmly in mind, and slowly starts to take form. Students are questioned; and students question. He outlines his lesson on the chalkboard making the presentation a step-by-step approach to a goal. He is the master salesman; his product is the subject matter. There are no disciplinary problems—how can there be any?—the class is spellbound—the class is actively learning.

What makes him such a success? What does he have that some other, equally conscientious, teachers do not have? Oh, to have an answer to that! What a key to open the treasure chest of teaching. *But* what does he have? He has a knowledge and love of his subject matter. This is evident from the start. His students recognize it and respect him for it. He has more than a book knowledge of students. His knowledge of youth is founded on respect and trust. This does not mean that he never has

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a discipline problem—but he has fewer. The students know what he expects, at all times. In every respect, he is consistent. He has a love and understanding of youth. He really understands the learning process. He is justly angry when they belabor a point for he knows, and his students know, that he has planned the material and presented it in the finest way. His plans are reflected in his presentation. They are not one or two line plans. They are real plans. He has taken pains to outline the lesson from all angles. He knows where he is going and how he is going to get there.

The master teacher is not going to cover "pages 31-37, Lit. Book" as we see in some plan books. He is covering these pages; but his plans show how and why. There can be no doubts as to the insights that he is trying to develop; no doubts as to the analysis to be done. This is a careful, well laid plan to trap and ensnare an audience into learning—and he succeeds. His assignments have meaning. They are related to the material previously taught or to the material to be taught. They are planned assignments which challenge the students. The students are aware of the fact that he checks the assignments. They rarely try to fake an assignment—they rarely want to do this. The man is a scholar and he has made them want to learn. He uses every device to better his presentation—the chalkboard, maps, pictures, records, *etc.*, and a few homemade devices which he deems necessary to make understanding more complete. The master teacher is an expert actor. He knows how to use his voice and how to dramatize and enliven a usually "dull" part of the work. His timing is excellent. He progresses at an even rate and covers the material in the planned time. He has allowed time for questioning and explanation; he is not caught by the bell.

Just as a jig saw puzzle was once a whole that has been segmented by plan so is his lesson a whole. By the end of the period the pieces fit together—by plan. He carries his class afar. He makes them think and probe. He has confidence in their ability (no matter what the level of ability) and the students recognize this, and work beyond their ability. This man is truly a teacher. He is real, and we all have seen many like him—and want to see more.

The Average Teacher

I have seen the average teacher. He never seems to reach the heights attained by the master teacher. I observe him and think: Why? How does he differ? How may we assist him? Much of the form is there but perhaps the art is lacking. Where is the difference? One by one you can read over the characteristics of the master teacher. Somewhere, in one or more than one of these, the average teacher is not up to the level of the master teacher. He may never be—some things cannot be taught—some things cannot be imitated. Why isn't his class as vibrant and alive as that of the master teacher? His planning may be part of the answer. An

improvement here may work a change. Well-made plans do not guarantee a perfect lesson; but poorly made plans almost always guarantee a poor lesson. Here may be the key. The plans reflect the purpose and aims and the manner in which these are to be achieved. Perhaps additional preparation is necessary. Not a formal course; but possibly more background is necessary. If he is not absolutely sure of his footing, he cannot firmly present the material of the lesson. Time spent now in preparing his lesson and his lesson plans may give him the spark which lights the way to real success. Each case must be analysed—each teacher must be brought up to his full potential if we are going to give pupils the best education possible. This teacher may need assistance before he starts to slide backwards. It is our job to work with him.

The Beginning Teacher

I have seen the beginning teacher. He is eager and willing. The students are a challenge to him. This is the attitude we want to preserve. He flounders now and then—this is his first year and it can be a fatal one. He is alone and on his own a great deal of the time. We watch him slowly grow into a more confident and competent teacher. He has potential and we must evaluate this. His first year may determine whether or not he makes a career of teaching. If he has potential, we do not want to lose him for the profession. He is often discouraged and we must work closely with him. He is our hope of carrying on the eternal goal of enlightening the youth of our land. We must provide him with the opportunity to grow into a master teacher. This involves watching his planning; correcting his faults; encouraging his development as an artist.

The Poor Teacher

I have observed the poor teacher. His classes are a reflection of him. He is putting in forty-two minutes and so are his classes. Little else occurs except the passage of time. If he has been given all of the assistance possible, we must let him go. Our students must learn and he does little to aid their progress. If he has the potential, then we, like the master teacher, must prod him into action. There is no doubt about the teacher shortage. Why add to it when, with effort, he can be successful.

In many visits I have seen many things. I have never ceased to admire the master teacher. He sets a high standard for the rest of the staff. Our observations of and conferences with other teachers must aim at lifting them up to his level. Today's observation is a record now. Did I see a master in action? Did I see an average teacher? Did I see a poor teacher? If my answer is yes to one of the last two questions, I have a building job to do. We are going to try to scale the heights and make another master teacher. Wish us luck!

Learning by Discovery: Rationale and Mystique

DAVID P. AUSUBEL

AT THE appropriate time and place, and for carefully designated purposes, learning by discovery has its defensible uses and undoubted advantages. This is what I will refer to as its rationale. But for a long time, and in many different guises, learning by discovery has also been both a fad and a religion. Some of its proponents have elevated it into a panacea, making exaggerated claims for its uses and efficacy that go far beyond the evidence as well as far beyond all reason. It purportedly can do things for which it was never originally intended and is even ill-adapted—and for reasons that border either on mystical veneration of its alleged effects on the learning process, or on sheer sentimental fantasy about the nature of the child and of the educative process. This is what I mean when I talk about its mystique. The chief aim of this article is to distinguish between the rationale and the mystique of the so-called discovery method of teaching.

Historical Antecedents

Before attempting to set forth the rationale and mystique of the discovery method, I think it might be helpful briefly to consider the more important of the numerous educational movements and currents of thought from which it has evolved. Some of its historical antecedents are relatively recent, whereas others have flourished for centuries. Unfortunately, also, not all of these precursory trends are logically compatible with each other.

The Progressive Education movement obviously furnished several major strands in the design of the discovery method. One aspect of this movement was a growing dissatisfaction with the empty formalism of much educational content in the latter part of the nineteenth century and the early part of the twentieth century; with stultifying drill and catechism-like methods of teaching; with the curriculum's lack of relatedness to the everyday experience of the child, his physical world, and social environment; and with pupils' rote verbalization and memorization of ideas for which they had no adequate referents in experience. Overstatement of the realities underlying this dissatisfaction constituted the basis of the later mystique that *all* verbal learning is little more than glib verbalism and parrot-like recitation. This led, in turn, to the exaggerated emphasis that progressivists placed on relating the curriculum to the physical and social environment of the child; on direct, immediate, and concrete experience as a prerequisite for meaningful understanding; on

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active learning and inquiry; and on incidental learning and learning in natural, uncontrived situations. From this type of emphasis grew activity programs and project methods, and the credo of "learning for and by problem solving" as the principal objective and method, respectively, of the educational enterprise. Two final by-products of this point of view were deification of the act of discovery associated with the inductive and incidental learning methods of teaching, and extrapolation to the secondary-school and university student of the elementary-school child's dependence on recently prior concrete, empirical experience in the comprehension and manipulation of ideas. As we shall see later, both of these developments became extremely important components of the mystique of learning by discovery.

Such modern proponents of the discovery method as Gertrude Hendrix acknowledge their historical and ideological kinship to the Progressive Education movement, but are quick to disassociate themselves from some of the basic assumptions made by the inductive and incidental learning approaches to instruction. Hendrix quite rightly points out that the main fallacy of the inductive approach lies in the teacher's use of the pupil's ability to verbalize a discovery as the "criterion by which [she] recognizes that discovery has taken place."[1] And in referring to the incidental learning that purportedly occurs in the course of a pupil's involvement in a project or activity program, Hendrix correctly berates the advocates of this method because "all too often they took no responsibility for seeing that instances of the same generalization came along close enough together for the learner to become aware of either concepts or principles."[2]

A second aspect of the Progressive Education movement relevant to the evolution of the discovery method was the child-centered approach to instruction that originated in the educational philosophies of Rousseau and Froebel. The adherents of this approach emphasized the importance of structuring the curriculum in terms of the nature of the child and his participation in the educative process, that is, in terms of his current interests, his endogenously derived needs, and his state of intellectual and emotional readiness. According to this point of view, the educational environment facilitates development best by providing a maximally permissive field that does not interfere with the predetermined process of spontaneous maturation. The child himself, it is asserted, is in the most strategic position to know and select those educational ingredients that correspond most closely with his prevailing developmental needs, and hence are most conducive to his optimal growth. Propositions such as these obviously make a fetish of autonomy and self-discovery, and regard as little short of sacrilege any form of guidance or direction in learning, and particularly the communication of insights or generalizations by teachers to pupils. Herein lies in part the origin of the mystique that

[1] Gertrude Hendrix (1961), p. 296.
[2] *Ibid.*, p. 293.

expository teaching is inherently authoritarian, and that self-discovered insights are uniquely and transcendentally endowed with meaning and understanding that can be achieved through no other means. Hendrix, for example, castigates didactic exposition of generalizations as "authoritarian" and as only "satisfying to someone who *is already aware* of the ideas being presented."[3] This same mystique also underlies the quite different educational doctrine that it is authoritarian and undemocratic for a knowledgeable person to communicate his knowledge to other persons lacking his particular background of thought and study, and that the latter individuals can learn more through "democratic discussion," that is, by talking off the tops of their heads and pooling their ignorance.

These two strands of the Progressive Education movement—emphasis on the child's direct experience and spontaneous interests, and insistence on autonomously achieved insight free of all directive manipulation of the learning environment—set the stage for the subsequent deification of problem solving, laboratory work, and naive emulation of the scientific method. Many mathematics and science teachers were rendered self-conscious about systematically presenting and explaining to their students the basic concepts and principles of their fields, because it was held that this procedure would promote glib verbalism and rote memorization. It was felt that if students worked enough problems and were kept busy pouring reagents into a sufficient number of test tubes, they would somehow spontaneously discover in a meaningful way all of the important concepts and generalizations they needed to know in the fields they were studying.

Of course, one had to take pains to discourage students from rotely memorizing formulas, and then mechanically substituting for the general terms in these formulas the particular values of specified variables in given problems. This would naturally be no less rote than formal didactic exposition. Hence, in accordance with the new emphasis on *meaningful* problem solving, students ceased memorizing formulas, memorizing instead type problems. They learned how to work exemplars of all of the kinds of problems they were responsible for, and then rotely memorized both the form of each type and its solution. Thus equipped, it was comparatively easy to sort the problems with which they were confronted into their respective categories, and "spontaneously proceed to discover meaningful solutions"—provided, of course, that the teacher played fair and presented recognizable exemplars of the various types.

Similarly, as the terms "laboratory" and "scientific method" became sacrosanct in American high schools and universities, students were coerced into mimicking the externally conspicuous but inherently trivial aspects of scientific method. They wasted many valuable hours collecting empirical data which, at the very worst, belabored the obvious, and at the very best, helped them rediscover or exemplify principles which the teacher could have presented verbally and demonstrated visually in a

[3] *Ibid.*, p. 296.

matter of minutes. Actually, they learned precious little subject matter and even less scientific method from this procedure. The unsophisticated scientific mind is only confused by the natural complexities of raw, unsystematized empirical data, and learns much more from schematic models and diagrams; and following laboratory manuals in cookbook fashion, without adequate knowledge of the relevant methodological and substantive principles involved, confers about as much genuine appreciation of scientific method as putting on a white "lab" coat and doing a TV commercial for "Roll-Aids."

As a result of the superstitious faith of educators in the magical efficacy of problem solving and laboratory methods, we have produced in the past four decades millions of high-school and college graduates who *never* had the foggiest notion of the meaning of a variable, of a function, of an exponent, of calculus, of molecular structure, or of electricity, but who have done all of the prescribed laboratory work, and have successfully solved an acceptable percentage of the required problems in differential and integral calculus, in logarithms, in molar and normal solutions, and in Ohm's Law.

One basic lesson that some modern proponents of the discovery method have drawn from this educational disaster is that problem solving *per se* is not conducive to meaningful discovery. Problem solving can be just as deadening, just as formalistic, just as mechanical, just as passive, and just as rote as the worst form of verbal exposition. The type of learning outcomes that emerges is largely a function of the structure, the substance, the organization, and the spirit of the problem solving experiences one provides. However, an equally important lesson which these same proponents of the discovery method refuse to draw is that, because of the educational logistics involved, even the best program of problem solving experience is no substitute for a minimally necessary amount of appropriate didactic exposition. But this minimum will never be made available as long as we adhere to the standard university formula of devoting one hour of exposition to every four hours of laboratory work and paper-and-pencil problem solving.

Historically, the discovery method may also be considered, in part, a revolt against the prevailing educational psychology of our time, which is largely an eclectic hodge-podge of logically incompatible theoretical propositions superimposed upon a sterile empiricism. Perhaps the most outrageous example of this unconscionable eclecticism has been the six-decade campaign sparked by Teachers College to integrate Thorndikian connectionism and a wildly extrapolated neo-Behaviorism with the major tenets of Progressive Education. But the transparent sophistry that resulted from the attempt to reconcile such antithetical sets of principles as the Law of Effect, drive reduction, stimulus-response and rote learning theory, the transfer of identical elements, and trial-and-error learning on the one hand and progressivist viewpoints regarding meaningful understanding of ideas, active inquiry, and autonomous discovery, on the other,

tended to alienate some of the more independent-minded educational psychologists in the Progressive Education camp. Some defected to psychoanalysis, spawning a weird synthesis of Deweyism and Freudianism, whereas others were attracted by the greater emphasis on cognition and insightful problem solving which characterized such field theorists and Gestalt theoreticians as Tolman, Lewin, Köhler, Wertheimer, and Katona. Also included among the defectors were many vigorous supporters of the discovery method, who viewed the extrapolation of rote learning theory to verbal classroom learning as sufficient proof of the essentially rote nature of verbal learning, and as ample justification for designing nonverbal discovery techniques of teaching.

A final current of educational thought influencing the evolution of the discovery method was the militant sentimentality underlying the currently popular educational objective of making *every* child a critical and creative thinker. This objective is, in part, a wish-fulfilling extension of our present-day preoccupation with actualizing the creative potentialities of gifted children. But it also harks back to certain conceptions within the mental measurement movement and to the official environmentalistic bias of Progressive Education. (At Teachers College, we must remember, Darwin and Mendel have always occupied prominent positions in the gallery of ideological villains.) If, for example, we accept the premise that the structure of intellect can be analyzed into a multiplicity of separately identifiable cognitive abilities or factors (as many as 120 according to Guilford[4]), the conclusion seems inescapable that simply on the basis of probability almost every child is destined to become a genius or a near-genius with respect to at least one factor; and even if a particular child were to receive an unlucky shake of the genic dice, a benevolent educational environment would certainly make up for the difference.

Rationale

As I suggested earlier, my unhappiness with the discovery method is not a generalized phenomenon. I do not disapprove of it under any and all circumstances. What I do object to are some of its unwarranted assumptions, overstated claims, inadequately tested propositions, and, above all, to some of the reasons advanced for its efficacy. I will consider these latter matters shortly under the general headings of mystique and evidence.

But let us begin on a more positive note and examine first the legitimate claims, the defensible uses, and the palpable advantages of the discovery method. In the early, unsophisticated stages of learning any abstract subject matter, particularly prior to adolescence, the discovery method is invaluable. It is also indispensable for teaching scientific method and effective problem solving skills. Furthermore, various cognitive and motivational factors undoubtedly enhance the learning, retention, and transferability of meaningful material learned by discovery.

[4] Guilford (1959).

Why are discovery methods so valuable in teaching difficult and abstract subject matter content to children, especially in fields such as mathematics with their own distinctive terminology and symbolic systems?

In the absence of prior discovery and nonverbal experience, children approximately below the age of twelve[5] tend to find directly presented verbal constructs of any complexity unrelatable to existing cognitive structure, and hence devoid of potential meaning.[6] Until they consolidate a sufficiently large working body of key verbal concepts based on appropriate experience, and until they become capable of directly interrelating abstract propositions without reference to specific instances, children are closely restricted to basic empirical data in the kinds of logical operations they can relate to cognitive structure. Thus in performing "class inclusive and relational operations," they generally require direct experience with the actual diverse instances underlying a concept or generalization, as well as proximate, nonverbal (rather than representational) contact with the objects or situations involved.[7] During the elementary-school years, directly presented and verbal materials are too distantly removed from empirical experience to be relatable to cognitive structure.[8]

Furthermore, for children who are still functioning at Piaget's level of concrete operations, nonverbal, intuitive discovery and application of principles, prior to formal verbalization, *is* often desirable, *in addition to* the use of concrete-empirical props. In learning more complex and abstract ideas far removed from everyday experience, it is plausible to suppose that subverbal insights acquired through discovery experience may serve as a facilitating transitional phase in the achievement of full verbal understanding. Verbalization of principles before this nonverbal insight is sufficiently consolidated may both interfere with the process of consolidation and impede transfer because it is self-evident that relatively well-established intuitive awareness of a principle is more functional and transferable to analogous situations than is a marginal type of verbal understanding. Also, if the verbalized principle is prematurely available, many pupils, especially those who are anxiety ridden or anxious to please, will be tempted to memorize the words rotely and abandon the quest for meaningful understanding.

This does not necessarily mean, however, that actual discovery is [always] required before meaningfulness is possible. As long as direct, nonverbal contact

[5] "The designation of age level here is solely for purposes of convenience, and is not meant to imply that the change is abrupt or that overlapping of learning processes does not occur between children in adjacent age groups. Nor does it imply that the transition is reflective of "internal ripening" and hence takes place invariably at this age. The precise age *around* which the transition occurs depends on the nature of the child's prior experience and education and on such individual differences as IQ. The only necessary assumption, therefore, is that a gradual qualitative transition in mode of learning takes place as children reach a certain level of cognitive sophistication, and that the age at which this change is most salient varies with both individual capacity and experience." (Ausubel, 1961, p. 20).

[6] See, for example, Piaget (1950, 1954), and Serra (1953).

[7] Inhelder and Piaget (1958).

[8] Ausubel (1961), p. 20.

with the data is an integral part of the learning situation, derivative verbal concepts and generalizations may often be meaningfully apprehended even though they are presented rather than discovered. But since discovery probably enhances both retention and transferability . . . [in more difficult and abstract learning tasks], and since the time-consuming empirical aspect of the learning must take place anyway, it is . . . [desirable] in these circumstances to encourage pupils independently to complete the final step of drawing inferences from data.[9]

In lesser degree, this same rationale also applies to adolescents and adults who are relatively unsophisticated in the basic concepts and terminology of a given discipline. The older individual, however, has the benefit of greater general cognitive sophistication and linguistic facility, as well as of past successful experience in meaningfully relating abstractions to each other without the aid of concrete, empirical experience. Hence, he will move through the intuitive, subverbal phase of insightful understanding much more rapidly than the comparably unsophisticated child, and, unlike the latter, will soon dispense with this phase entirely.

The discovery method also has obvious uses in teaching problem solving techniques and appreciation of scientific method. There is no better way of developing effective skills in hypothesis making and testing; desirable attitudes "toward learning and inquiry, toward guessing and hunches, toward the possibility of solving problems on one's own . . .; [and] attitudes about the ultimate orderliness of nature and a conviction that order can be discovered."[10] As a matter of fact, this is the major rationale for laboratory work. Except in the case of children and unsophisticated older persons, subject matter content can be both transmitted and illustrated much more efficiently by means of exposition, demonstration, and schematic models.

Independent problem solving, furthermore, is perhaps the only feasible way of testing whether students *really* comprehend meaningfully the ideas they are able to verbalize. But here we have to be careful not to fall into a trap. To say that problem solving is the only practical method of measuring the meaningful understanding of ideas is *not* the same as saying that the learner who is unable to solve a representative set of problems *necessarily* does not understand, but has merely memorized the principles exemplified by these problems. Successful problem solving demands many *other* abilities and qualities, such as reasoning power, perseverance, flexibility, improvisation, sensitivity, and tactical astuteness, *in addition to* meaningful comprehension of the underlying principles. Hence, failure to solve the problems in question may reflect deficiencies in these latter factors rather than lack of genuine understanding.

Finally, in spite of the inconclusive empirical evidence, when all is said and done, and one has properly discounted the exaggerated claims made

[9] *Ibid.*, p. 21.
[10] Bruner (1960), p. 20.

for the unique virtues of learning by discovery, as well as the fanciful reasons offered for same, it still seems

> plausible to suppose that the greater effort and vividness associated with independent discovery lead to somewhat greater learning and retention. One might expect the advantages conferred by discovery techniques to be even greater with respect to transferability, since the experience gained from formulating a generalization from diverse instances . . . obviously facilitates the solution of problems involving this generalization.[11]

The crucial points at issue, however, are not whether learning by discovery enhances learning, retention, and transferability, but (a) whether it does so *sufficiently*, for learners who are capable of learning principles meaningfully *without* it, to warrant the vastly increased expenditure of time it requires; and (b) whether, in view of this time consideration, the discovery method is a feasible technique for transmitting the substantive content of an intellectual or scientific discipline to cognitively mature students who have already mastered its rudiments and basic vocabulary. It is largely to an exploration of these issues that the remainder of this article is devoted.

Mystique

For purposes of analysis, the mystique of learning by discovery may be conveniently divided into nine propositions.

All Real Knowledge Is Self-Discovered

The most general and metaphysical of the nine propositions is the familiar assertion that to possess knowledge *really* or acquire an idea, the learner must discover it by himself or through his own insight. This proposition stems in part from the deification of the act of creative discovery in the problem solving, activity program approach to teaching, and from John Dewey's extreme preference for problem solving ability, rather than ability to acquire knowledge, as the proper criterion of intelligence. It is also partly derived from the child-centered and client-centered doctrines that the individual himself is best equipped to regulate the process of learning about himself and his universe, and, therefore, that any tampering with this autonomy, is, by definition, detrimental to learning outcomes.

More recently, a sentimental type of Rousseauean mysticism and primitivism has become fashionable, and has been superimposed upon the aforementioned ideological substrate. It is best exemplified by Jerome Bruner's statement that:

> . . . if man's intellectual excellence is the most his own among his perfections, it is also the case that the most uniquely personal of all that he knows is that which he has discovered himself . . . [Discovery creates] a special and unique relation between knowledge possessed and the possessor[12]. . . . The transition

[11] Ausubel (1961), p. 22.
[12] Bruner (1961a), p. 22.

to adulthood involves an introduction to new realms of experience, the discovery and exploration of new mysteries, the gaining of new powers. This is the heady stuff of education and it is its own reward.[13]

In accordance with this conception of the true nature of genuine knowledge, Bruner formulates the objectives of education as follows:

> School should provide not simply a continuity with the broader community or with everyday experience. It is the special community where one experiences discovery by the use of intelligence, where one leaps into new and unimagined realms of experiece, experience that is discontinuous with what went before[14]. . . . Education must also seek to develop the processes of intelligence so that the individual is capable of going beyond the cultural ways of his social world, able to innovate, in however modest a way, so that he can create an interior culture of his own. For whatever the art, the science, the literature, the history, and the geography of a culture, each man must be his own artist, his own scientist, his own historian, his own navigator.[15]

Now these are lofty and poetically expressed sentiments, and anyone but a clod would regret having to assume the role of wet blanket by interposing such mundane considerations as validity and practicality. It is perfectly true that one cannot simply soak up one's culture like a piece of blotting paper and expect it to be meaningful. But who advocates doing anything of the kind? The very processes of perception and cognition necessarily require that the cultural stimulus world must first be filtered through each individual's personal sensory apparatus and cognitive structure before it can have any meaning. Meaning can never be anything more than a *personal* phenomenological product that emerges when potentially meaningful ideas are integrated within an individually unique cognitive structure. Invariably, therefore, the achievement of meaning requires translation into a personal frame of reference, and reconciliation with established concepts and propositions. All of this goes on in any program of meaningful expository teaching, and is obviously a far cry from the straw-man picture of passive absorption which Bruner draws to disparage this method and thereby enhance the relative attractiveness of learning by discovery. Most of what anyone *really* knows consists of insights discovered by *others* which have been communicated to him in meaningful fashion.

Quite apart from its lack of face validity, the proposition that every man must discover for himself every bit of knowledge that he *really* wishes to possess is, in essence, a repudiation of the very concept of culture. For perhaps the most unique attribute of human culture, which distinguishes it from every other kind of social organization in the animal kingdom, is precisely the fact that the accumulated discoveries of millennia can be transmitted to each succeeding generation in the course of childhood and youth, and need not be discovered anew by each genera-

[13] Bruner (1961b), p. 76.
[14] *Ibid.*
[15] *Ibid.*, p. 59.

tion. This miracle of culture is made possible only because it is so much less time-consuming to communicate and explain an idea meaningfully to others than to have them rediscover it by themselves.

Within each generation, therefore, we can only expect a given individual to internalize meaningfully a reasonable fragment of the total fabric of the culture that is expounded to him by the various educational agencies. If we are at all concerned with the breadth of his knowledge, we cannot possibly expect him to discover everything he is expected to know. The obligation of going beyond one's cultural heritage and contributing something new is an obligation that applies to an entire generation, not to each of its individual members. Hence, as we shall see later, the school cannot realistically set for itself the goal of having *each* child "leap into new and unimagined realms of experience" and emerge with ideas that are "discontinuous with what went before." The school can only hope to help one child in a thousand do this, or, more likely, one child in a million.

Meaning as an Exclusive Product of Creative, Nonverbal Discovery

A related proposition that relies somewhat less on flat epistemological assertion, and is more naturalistically grounded, holds that abstract concepts and propositions are forms of empty verbalism unless the learner discovers them directly out of his own concrete, empirical, nonverbal experience.[16] Another slightly different way of expressing the same idea is to say that "generalizations are products of problem-solving . . . and are attainable in no other way."[17] Careful analysis of this proposition reveals, in my opinion, that it rests on three serious logical fallacies: (a) a straw-man representation of the method of verbal learning; (b) the failure to distinguish properly between reception and discovery learning, on the one hand, and the prevailing tendency to confuse the reception-discovery dimension of the learning process with the rote-meaningful dimension, on the other; and (c) unwarranted generalization of the distinctive conditions of learning and thinking in childhood to adolescence and adult life.

The use of the old straw-man technique was, of course, the simplest and most effective way of discrediting the method of verbal exposition. Instead of describing this procedure in terms of its essential characteristics, it became fashionable to picture it in terms of its worst abuses. Examples of such abuses were naturally not very difficult to find, since an appreciable number of teachers still rely on rote verbal learning in teaching meaningful subject matter. Some of the more flagrantly inept practices include "premature use of verbal techniques with cognitively immature pupils; arbitrary . . . presentation of unrelated facts without any organizing or explanatory principles; failure to integrate new learning tasks with previously presented materials; and the use of evaluation pro-

[16] Brownell and Hendrickson (1950), p. 112.
[17] *Ibid.*, p. 119.

cedures that merely measure ability to recognize discrete facts or to reproduce ideas in the same words or in the identical context as originally encountered."[18]

Nevertheless, even though it is entirely proper to caution teachers against these kinds of abuses, it is highly casuistic to represent them as inherent in the method itself. An approach to teaching which is rational and appropriate on logical and psychological grounds should not be branded as worthless and discarded simply because, like all pedagogical techniques in the hands of incompetent or unintelligent teachers, it is subject to misuse.

A second reason why meaning is commonly perceived as an exclusive product of problem solving and discovery techniques of learning, is because widespread confusion exists regarding basic distinctions between reception and discovery learning, and between rote and meaningful learning. This confusion, of course, is largely attributable to the lamentable tendency on the part of many educational psychologists to interpret meaningful school learning in terms of the same concepts used to explain instrumental conditioning, paired-associate learning, rote serial learning, maze learning, and simple discrimination learning.

"Because most of the understandings that learners acquire both in and out of school are presented rather than discovered,"[19] it is crucially important to differentiate between reception and discovery learning. In reception learning (rote or meaningful), the learner is not required to discover what he learns, but need only internalize what is presented to him so that it is available and reproducible at some future time. In discovery learning, on the other hand, the substance of what is to be learned must first be independently discovered by the learner before he can internalize it.

> The first phase of discovery learning, therefore, involves a process quite different from that of reception learning. The learner must rearrange a given array of information, integrate it with existing cognitive structure, and reorganize or transform the integrated combination in such a way as to create a desired end product or discover a missing means-end relationship. After this phase is completed, the discovered content is internalized just as in reception learning.[20]

Now this distinction between reception and discovery learning has absolutely nothing to do with the rote-meaningful dimension of the learning process. Hence it is erroneous to assume that reception learning is invariably rote and that discovery learning is invariably meaningful. *Both* kinds of learning can either be rote *or* meaningful depending on the conditions under which the learning occurs. Reception or discovery learning is meaningful provided that the learner adopts a set to incorpo-

[18] Ausubel (1961), pp. 23-24.
[19] *Ibid.*, p. 16.
[20] *Ibid.*, p. 16.

rate the substantive import of the learning task within his cognitive structure, and that the task itself is potentially meaningful, that is, logically or nonarbitrarily related thereto. It is rote, on the other hand, if the task consists of purely arbitrary associations, as in paried-associate, puzzle-box, or serial learning, and also (regardless of how much potential meaning the task has), if the learner adopts a set merely to internalize it in an arbitrary, verbatim fashion. It should be clear up to this point, therefore, that verbal reception learning is not neoessarily rote in character, and can be meaningful even when not preceded by problem solving or discovery experience.

But in discussing the legitimate rationale of the discovery method, it will be remembered that I placed certain developmental limits on meaningful verbal reception learning. I pointed out then that learners who have not yet developed beyond the concrete stage of logical operations are unable to incorporate within their cognitive structures a relationship between two or more abstractions, unless they have the benefit of recently prior concrete, empirical experience. Such learners, therefore, cannot meaningfully comprehend verbally or symbolically expressed propositions without the aid of these concrete-empirical props, although they by no means have to discover these propositions autonomously in order to understand them meaningfully. As every elementary-school teacher knows, meaningful verbal reception learning—without any problem solving or discovery experience whatsoever—is perhaps the most common form of classroom learning, provided that the necessary props are available.

Beginning in the junior high school period, however, and becoming increasingly more true thereafter, prior empirical and nonverbal experience is no longer essential before concepts and generalizations become potentially meaningful. It is true, of course, that the pupil's established verbal concepts must have been preceded sometime in the past by direct, nonverbal experience with the data from which they were abstracted; but once these concepts are sufficiently well consolidated, and the pupil is able to manipulate and interrelate them adequately on a purely abstract basis, new learning material is logically relatable to cognitive structure without any direct or nonverbal *current* reference to empirical data. The adolescent, unlike the typical elementary-school child, *is* capable of performing logical operations on verbal propositions.[21] His concepts and generalizations, therefore, tend more to be second-order constructs derived from relationships between previously established verbal abstractions already one step removed from the data itself.[22] And since he is freed from dependence on direct, nonverbal contact with data in independently discovering meaningful new concepts and generalizations, he is obviously also liberated from this same dependence in the much less rigorous task of merely apprehending these constructs meaningfully when they are verbally presented to him.[23]

[21] Inhelder and Piaget (1958).
[22] *Ibid.*
[23] Ausubel (1961), p. 21.

This is the point at which some of the more zealous proponents of Progressive Education took a disastrously false turn. John Dewey had correctly recognized that meaningful understanding of abstract concepts and principles in childhood must be built on a foundation of direct, empirical experience and, for this reason, advocated the use of project and activity methods in the elementary school. But he also appreciated that once a firmly grounded first storey of abstract understandings was established, it was possible to organize secondary and higher education along more abstract and verbal lines. Unfortunately, however, although Dewey himself never elaborated or implemented this latter conception, some of his disciples blindly generalized childhood limiting conditions, with respect to meaningful verbal reception learning, broadly enough to encompass learning over the entire life span. And this unwarranted extrapolation, frequently but erroneously attributed to Dewey himself, provided a pseudonaturalistic rationale for, and thus helped perpetuate, the seemingly indestructable myth that, under any and all circumstances, abstractions cannot possibly be meaningful unless preceded by direct, empirical experience.

The Discovery Method in Transmitting Subject Matter Content

Educators who are convinced that abstractions are mere glib verbalisms unless independently discovered by the learner have no other logical alternative than to advocate the use of discovery techniques—in high school and university as well as in the elementary school—as a principal method of transmitting the substantive content of subject matter. Easley,[24] for example, argues strenuously for reorganizing, in whole or in part, the curriculum of science, mathematics, and other secondary-school and college level subjects along the lines of inductive discovery. He also insists that nonverbal understanding and application of principles should be required of and demonstrated by students before they are permitted to use them in verbal form.

But whereas the frequent use of discovery techniques in the transmission of complex and abstract subject matter content can be defended in the elementary school, on the grounds that the acquisition and transfer of subverbal insight may possibly facilitate the later acquisition of verbal understanding, it is difficult to rationalize the same practice in high school and beyond. It is true, as already pointed out, that the utilization of subverbal insight by older individuals might be temporarily helpful in the early, unsophisticated stages of learning a difficult new discipline. Nevertheless, since discovery methods are incomparably more time-consuming than didactic verbal exposition, and since the cognitively mature individual does not linger very long in the unsophisticated state that is benefited by prior acquisition of subverbal insight, the use of these methods as a *primary* means of transmitting subject-matter content is as unfeasible as it is unnecessary. If secondary-school and university stu-

[24] Easley (1958, 1959).

dents were obliged to discover for themselves every concept and principle in the syllabus, they would never get much beyond the rudiments of any discipline. However, as is similarly the case in the elementary school, teachers who do not regard completely *autonomous* discovery as sacrosanct could greatly mitigate the time-consuming disadvantage of discovery methods by the judicious use of prompts or hints.

Some discovery enthusiasts[25] grudgingly admit that there is not sufficient time for pupils to discover everything they need to know in the various disciplines, and hence concede that there is also room for good expository teaching in the schools. In practice, however, this concession counts for little, because in the very next breath they claim that the acquisition of actual knowledge is less important than the acquisition of ability to discover knowledge autonomously and propose that pedagogy and the curriculum be reorganized accordingly. Hence, in spite of the formal bow they make to didactic exposition, it is clear that they regard the acquisition of problem solving ability[26] as more basic than the acquisition of subject matter. There is, after all, only so much time in a school day. If the school takes as its principal function the development of discovery and inquiry skills, how much time could possibly remain for the teaching of subject matter?

Subverbal Awareness as the Key to Transfer

We have seen, up to this point, that the reasoning underlying the mystique of discovery as a prerequisite for meaning has rested either upon bald metaphysical assertion, or upon unwarranted pseudonaturalistic assumptions regarding the nature of understanding and knowledge. Gertrude Hendrix tried to fill this theoretical void by constructing a more systematic and sophisticated pedagogic rationale for the discovery method than had been attempted heretofore. She did this by adapting to the problem of transfer the time-honored labeling theory of the function of language in thought. Hendrix denies that verbal generalizing is the primary generator of transfer power. . . . As far as transfer power [is] concerned the whole thing [is] there as soon as the non-verbal awareness [dawns]. . . . The separation of discovery phenomena from the process of composing sentences which express those discoveries is the big new breakthrough in pedagogical theory.[27]

The "key to transfer," Hendrix states, is a "subverbal internal process—something which must happen to the organism before it has any new knowledge to verbalize."[28] Verbalization, she asserts further, is not only unnecessary for the generation and transfer of ideas and understanding, but is also positively harmful when used for *these* purposes. Language only enters the picture because of the need to attach a symbol or label to the emerging subverbal insight so that it can be recorded, verified, classi-

[25] See, for example, Bruner (1960), p. 21; Suchman (1961), p. 32.
[26] Bruner (1961b), p. 77; Suchman (1961), pp. 6, 7, 32.
[27] Hendrix (1961), pp. 292, 290.
[28] Hendrix (1947), p. 200.

fied, and communicated to others; but the entire substance of the idea inheres in the subverbal insight itself. The resulting problem then, according to Hendrix, becomes one of how to plan and execute teaching so that language can be used for these necessary secondary functions "*without* damage to the dynamic quality of the learning itself."[29]

How plausible is this proposition? Let us grant at the outset that a subverbal type of awareness or insight exists, and that this type of insight is displayed by rats, monkeys, and chimpanzees in experimental learning situations, and by household pets, saddle horses, barnyard animals, wild beasts, children, and adults in a wide variety of everyday problem solving situations. But is it because of this type of insight that human beings have evolved a culture and have achieved some progress in such fields as philosophy, chemistry, physics, biology, and mathematics, quite beyond anything yet approached by horses, chickens, or apes? Or is it because of the qualitatively superior transfer power of verbal or symbolic generalization?

The principal fallacy in Gertrude Hendrix' line of argument, in my opinion, lies in her failure to distinguish between the labeling and process functions of language in thought. She writes:

> We have been a long time realizing that subverbal awareness of a class, or a property, or a relation *had* to be in *some*one's mind before anyone could have thought of inventing a word for it anyway. In the natural order of events, the abstraction forms first, and *then* a name for it is invented.[30]

Now what Hendrix is referring to here is simply the labeling or naming function of language in thought. The choice of a particular arbitrary symbol to represent a *new* abstraction obviously comes *after* the *process* of abstraction, and is not organically related to it. But this is not the *only* role of language in the abstraction process, nor is it the *first* time that it is used in this process. Verbalization, I submit, does more than verbally gild the lily of subverbal insight; it does more than just attach a symbolic handle to an idea so that one can record, verify, classify, and communicate it more readily. It constitutes, rather, an integral part of the very process of abstraction itself. When an individual uses language to express an idea, he is not merely encoding subverbal insight into words. On the contrary, he is engaged in a process of generating a higher level of insight that transcends by far—in clarity, precision, generality, and inclusiveness—the previously achieved stage of subverbal awareness.

The old philosophical notion that words merely mirror thought or clothe it in outer garments is charmingly poetic but has little functional utility or explanatory value in the modern science of psycholinguistics. Even the seemingly simple act of making a choice of words in developing an idea involves complex processes of categorization, differentiation, abstraction, and generalization; the rejection of alternative possibilities; and the exclusion of less precise or overinclusive meanings. All of these

[29] Hendrix (1961), p. 292.
[30] Hendrix (1950), p. 335.

processes contribute to and help account for the qualitatively superior transfer power of symbolic generalization.

Although the transfer power of symbolic generalization operates at many different levels of complexity and sophistication, even the simplest level transcends the kind of transfer that can be achieved with subverbal insight. Consider, for example, the transfer power of the word "house," which most preschool children can use correctly. Obviously, before the child ever uses this word, he has some unverbalized notion of what a house is. But I submit that, once he attains and can meaningfully use the verbal concept of "house," he possesses an emergent new idea that he never possessed before—an idea that is sharper, clearer, more precise, more inclusive, more transferable, and more manipulable for purposes of thinking and comprehension that its crude subverbal precursor. He can now talk about the idea of "house" in the abstract, devoid of all particularity, and can combine this idea with concepts of form, size, color, number, function, *etc.* to formulate relational propositions that could hitherto be formulated with only the greatest difficulty. That verbal concepts of this nature are more transferable and more manipulable than subverbal insights is demonstrated by numerous experiments on the effects of verbalization on children's ability to solve transposition problems.[31] Knowledge of underlying verbal principles also enhances the learning of relevant motor performance; and the availability of distinctive verbal responses facilitates rather than inhibits concept formation and conceptual transfer.[32]

Not all ideas, however, are acquired quite as easily as the concept of house. As he enters school, the child encounters other concepts of much greater abstractness and complexity, e.g., concepts of addition, multiplication, government, society, force, velocity, digestion, that transcend his immediate experience and language ability. Before he can hope to acquire a meaningful grasp of such abstractions directly, that is, through direct verbal exposition, he must first acquire a minimal level of sophistication in the particular subject matter area, as well as graduate into the higher level of intellectual development, i.e., the stage of formal logical operations. In the meantime he is limited to an intuitive, subverbal kind of understanding of these concepts; and, even though convincing empirical evidence is still lacking, it is reasonable to suppose that preliminary acquisition and utilization of this subverbal level of insight both facilitates learning and transferability, and promotes the eventual emergence of *full* verbal understanding. (Gertrude Hendrix, of course, would say that *full* understanding was already attained in the subverbal phase, and that verbalization merely attaches one to subverbal insight.)

Now, assuming for the moment that Hendrix' experimental findings are valid, how can we explain the fact that immediate verbalization of newly acquired subverbal insight renders that insight less transferable than

[31] See, for example, Spiker and Terrill (1960); Weir and Stevenson (1959).

[32] See Ausubel and Fitzgerald (1961) for a review of these findings.

when verbalization is not attempted?[33] First, it seems likely that verbalization of nonverbal insight, before such insight is adequately consolidated by extensive use, may interfere with consolidation at this level, as well as encourage rote memorization of the ineptly stated verbal proposition. Even more important, however, is the likelihood that a verbally expressed idea—when ambiguous, unprecise, ineptly formulated, and only marginally competent—possesses less functional utility and transferability than the ordinarily more primitive and less transferable subverbal insight. This is particularly true in the case of children because of their limited linguistic facility and their relative incompetence in formal propositional logic.

Drawing these various strands of argument together, what can we legitimately conclude at this point? First, verbalization does more than just encode subverbal insight into words. It is part of the very process of thought which makes possible a qualitatively higher level of understanding with greatly enhanced transfer power. Second, direct acquisition of ideas from verbally presented propositions presupposes both that the learner has attained the stage of formal logical operations, and that he possesses minimal sophistication in the particular subject matter in question. The typical elementary-school child, therefore, tends to be limited to an intuitive, subverbal awareness of difficult abstractions. The older, cognitively mature individual, however, who is also unsophisticated in a particular subject matter area is able to dispense with the subverbal phase of awareness rather quickly, i.e., as soon as he attains the necessary degree of sophistication; and once he attains it, he probably short-circuits the subverbal phase completely. Lastly, immediate verbalization of a nonverbal insight, when this latter insight is newly acquired and inadequately consolidated, probably decreases its transferability. This phenomenon can be explained by means of the general developmental principle that an ordinarily higher and more efficient stage of development, while still embryonic and only marginally competent, is less functional than an ordinarily more primitive and less efficient phase of development. Running, for example, is eventually more efficient than creeping, but if a one-year-old infant had to run for his life, he would make better progress creeping.

Gertrude Hendrix, however, comes out with somewhat different and more sweeping conclusions from the same set of data. First, she regards nonverbal awareness as containing within itself the entire essence of an emerging idea, and insists that language merely adds a convenient symbolic handle to this idea. Second, she generalizes children's dependence on a preliminary subverbal stage of awareness, to all age levels, to all degrees of subject matter sophistication, and to all levels of ideational difficulty. Actually, this subverbal stage is highly abbreviated, both for young children learning less difficult kinds of abstractions and for older, cognitively mature individuals working in a particular subject matter

[33] Hendrix (1947).

area in which they happen to be unsophisticated; and it is bypassed completely when this latter sophistication is attained. Finally, she interprets her experimental findings regarding the inhibitory effects of immediate verbalization on the transferability of subverbal insight, as providing empirical *proof* of her thesis that both the substance of an idea and the essential basis of its transfer power are present in their entirety as soon as nonverbal awareness emerges. In my opinion, these findings do nothing of the kind. They merely show that a relatively clear subverbal insight, even when only partially consolidated, is more functional and transferable than an ambiguous, inept, and marginally competent verbally expressed idea.

Unlike Gertrude Hendrix, therefore, I would conclude that secondary-school and college students, who already possess a sound, meaningful grasp of the rudiments of a discipline like mathematics can be taught this subject meaningfully and with maximal efficiency through the method of verbal exposition, supplemented by appropriate problem solving experience; and that the use of the discovery method in these circumstances is inordinately time-consuming, wasteful, and rarely warranted. Why do discovery techniques seem to work so well in programs such as the one devised by the University of Illinois Committee on School Mathematics? For one thing, the students entering the program, being victims of conventional arithmetic teaching in the elementary schools, do *not* have a sound, meaningful grasp of the rudiments of mathematics and have to be re-educated, so to speak, from scratch. For another, I have a very strong impression that as the program develops, the discovery element becomes progressively attenuated, until eventually it is accorded only token recognition. Lastly, stripped of its quite limited discovery aspects, the UICSM approach is a much more systematic, highly organized, self-consistent, carefully programmed, abstractly verbal system of verbal exposition than anything we have known to date in secondary-school mathematics. If it proves anything, the success of this program is a testimonial to the feasibility and value of a good program of didactic verbal exposition in secondary-school mathematics, which program is taught by able and enthusiastic instructors and, in its early stages, makes judicious use of inductive and discovery techniques.

Problem-Solving Ability as the Primary Goal of Education

A fourth proposition underlying the mystique of learning by discovery is the belief that the development of problem-solving ability is the primary goal of education, and that somehow in the course of implementing this objective, the learner acquires all of the really important subject matter content he needs to know. But although these two objectives are related and, in a sense, mutually supportive, they are far from being identical. Hence it cannot be assumed that methods promoting one objective necessarily promote the other. For this reason alone, "the process and goal of education" can hardly be considered "one and the

same thing,"[34] as Bruner claims they are. The mere statement of any goal, furthermore, neither specifies the optimal methods whereby it can be achieved nor indicates the intervening process.

Quite apart from its usefulness in problem solving, the acquisition of knowledge as an end in itself must be considered a major goal of education. A large proportion of what any individual learns in the course of a lifetime has no immediate utility and is not applicable to any pressing problem of adjustment. Nevertheless, human beings are strongly motivated to learn so that they can better understand themselves, the universe, the human condition, and the meaning of life. Hence, if we are concerned with achieving this particular aim of education, we cannot leave its implementation to problem solving and discovery techniques. The use of these techniques, as already pointed out, furthers the problem solving objective of education, but, except in the elementary school and under other special circumstances, is not very efficient for transmitting subject matter content. It is also important to appreciate at this point that typical problem solving activity is most useful in dealing with everyday problems of living, and in illustrating, reinforcing, and testing for meaningful comprehension of concepts and principles. But only in the hands of particularly creative individuals does it constitute a practical method of acquiring ideas that are important enough to include in the learner's store of knowledge.[35]

In the realm of educational theory, if not in actual practice, the impact of Dewey's exaggerated emphasis on problem solving still continues to disturb the natural balance between the "transmission of the culture" and the problem solving objectives of education. Enthusiastic proponents of the discovery method still assert that "more basic than the attainment of concepts is the ability to inquire and discover them autonomously."[36] And to this Bruner adds:

> Whatever [program] is introduced [in the schools] let it be pursued continuously enough to give the student a sense of the power of mind that comes from a deepening of understanding. It is this, rather than any form of coverage over time that matters most.[37]

These somewhat extreme value judgments regarding the principal function of the school inspire, in turn, correspondingly one-sided proposals with respect to curriculum and pedagogy. Suchman, for example, contends that,

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[34] Bruner (1961b), p. 77.

[35] "The inductive derivation of concepts and generalizations from diverse instances is an exception to this statement, but is only a conspicuous feature of concept attainment during childhood (before a really large quantity of subject matter is incorporated). For the most part in the formal education of the individual, the educating agency merely transmits ready-made concepts, categorical schemata, and relational propositions." (Ausubel, 1961, p. 21).

[36] Suchman (1961), p. 32.

[37] Bruner (1961b), p. 77.

the schools must have a new pedagogy with a new set of goals which subordinates retention to thinking. . . . Instead of devoting their efforts to storing information and recalling it on demand, they would be developing the cognitive functions needed to seek out and organize information in a way that would be most productive of new concepts.[38]

The development of problem solving ability is, of course,

a legitimate and significant educational objective in its own right. Hence it is highly defensible to utilize a certain proportion of classroom time in developing appreciation of and facility in the use of scientific methods of inquiry and of other empirical, inductive and deductive problem-solving procedures. But this is a far cry from advocating that the enhancement of problem-solving ability is the major function of the school. To acquire facility in problem solving and scientific method, it is not necessary for learners to rediscover every principle in the syllabus. Since problem-solving ability is itself transferable, at least within a given subject matter field, facility gained in independently formulating and applying one generalization is transferable to other problem areas in the same discipline. Furthermore, overemphasis on developing problem-solving ability would ultimately defeat its own ends. It would leave students with insufficient time in which to learn the content of a discipline; and, hence, despite their adeptness at problem solving, they would be unable to solve simple problems involving the application of such content.[39]

Training in the "Heuristics of Discovery"

Some advocates of the discovery method favor a type of guided practice in the "heuristics of discovery" that is reminiscent of the faculty psychology approach to improving over-all critical thinking ability through instruction in the general principles of logic. Once the heuristics of discovery are mastered, they constitute, according to Bruner, "a style of problem solving or inquiry that serves for any kind of task one may encounter."[40] Similarly, Suchman's inquiry training program "is not proposed as a new way to teach science, but as a way of teaching basic cognitive skills . . . [that belong] in the science program and in every other curriculum area that requires . . . reasoning and the formulation and testing of hypotheses."[41]

One principal difficulty with this approach, as the faculty psychologists discovered, is that critical thinking ability can only be enhanced within the context of a specific discipline. Grand strategies of discovery do not seem to be transferable across disciplinary lines—either when acquired within a given discipline, or when learned in a more general form apart from specific subject matter content. This principle has been confirmed by countless studies and is illustrated by the laughable errors of logic and judgment committed by distinguished scientists and scholars who wander outside their own disciplines. From a purely theoretical standpoint alone, it hardly seems plausible that a strategy of inquiry, which

[38] Suchman (1961), pp. 6-7.
[39] Ausubel (1961), p. 23.
[40] Bruner (1961a), p. 31.
[41] Suchman (1961), p.32.

must necessarily be broad enough to be applicable to a wide range of disciplines and problems, can ever have, at the same time, sufficient particular relevance to be helpful in the solution of the specific problem at hand. And from the standpoint of elementary-school children, one wonders whether grand strategies of inquiry pitched at this level of abstraction can be meaningful enough to be used successfully in problem solving.

A second significant difficulty with this approach is that its proponents tend to confuse the goals of the scientist with the goals of the science student. They assert that these objectives are identical, and hence that students can learn science most effectively by enacting the role of junior scientist. The underlying rationale is that all intellectual activity regardless of level is of one piece, and that both creative scientists and elementary-school children rely heavily on intuitive thinking. Bruner is an eloquent spokesman for this point of view:

> Intellectual activity anywhere is the same, whether at the frontier of knowledge or in a third-grade classroom. What a scientist does at his desk or in the laboratory, what a literary critic does in reading a poem are of the same order as what anybody else does when he is engaged in like activities—if he is to achieve understanding. The difference is in degree, not in kind. The schoolboy learning physics *is* a physicist, and it is easier for him to learn physics behaving like a physicist than doing something else.[42]

Suchman also explains that the ultimate goal of his inquiry training program is for children to discover and formulate explanations which represent

> the causality of a single instance in terms of broad universal principles and generalizations. This is the unification of concepts for which the scientist strives. It can and, in our opinion, should be the ultimate goal of children's inquiry as well.[43]

In the first place, although it is true that all kinds of meaningful activity have certain attributes in common, differences in the level of abstraction, generality, and sophistication involved may very well give rise to qualitative as well as quantitative differences between them.

Second, I cannot agree that the goals of the research scientist and of the science student are identical. The scientist is engaged in a full-time search for new general or applied principles in his field. The student, on the other hand, is primarily engaged in an effort to learn the same basic subject matter in this field which the scientist had learned in his student days, and also to learn something of the method and spirit of scientific inquiry. Thus, while it makes perfectly good sense for the scientist to work full-time formulating and testing new hypotheses, it is quite indefensible, in my opinion, for the student to be doing the same thing—either for real, or in the sense of rediscovery. Most of the latter's time should be taken up with appropriate expository learning, and the remainder devoted to sampling the flavor and techniques of scientific

[42] Bruner (1960), p. 14.
[43] Suchman (1961), p. 13.

method. It is the scientist's business to formulate unifying explanatory principles in science. It is the student's business to learn these principles as meaningfully and critically as possible, and *then*, after his background is adequate, to try to improve on them if he can. If he is ever to discover, he must first learn; and he cannot learn adequately by pretending he is a junior scientist.

Lastly, there is in my opinion a world of difference between the intuitive thinking of elementary-school children and the intuitive thinking of scholars and scientists. The elementary-school child thinks intuitively or subverbally about many complex, abstract problems, not because he is creative, but because this is the *best he can do* at his particular stage of intellectual development. The intuitive thinking of scientists, on the other hand, consists of tentative and roughly formulated "hunches" which are merely preparatory to more rigorous thought. Furthermore, although the hunches themselves are only makeshift approximations which are not very precisely stated, they presuppose both a high level of abstract verbal ability as well as sophisticated knowledge of a particular discipline.

Every Child a Creative and Critical Thinker

I have already alluded to the fact that one of the currently fashionable educational doctrines giving support to the discovery method movement is the notion that the school can make every child a creative thinker and help him discover discontinuously new ideas and ways of looking at things. Creativity, it is alleged, is not the exclusive property of the rare genius among us, but a tender bud that resides in some measure within every child, requiring only the gentle, catalytic influence of sensitive, imaginative teaching to coax it into glorious bloom.

This idea rests on the following questionable assumptions: that one can be creative without necessarily being original; that all discovery activity, irrespective of originality is qualitatively of one piece—from Einstein's formulation of the theory of relativity to every infant's spontaneous discovery that objects continue to exist even when they are out of sight; that considering the multiplicity of abilities, every person stands a good chance, genetically speaking, of being creative in at least one area; and that even if uncooperative, good teachers can take the place of missing genes.

Hohn's use of the term "creativity" is typical of the prevailing tendency in "discovery" circles to "democratize" the meaning of this concept. A child behaves creatively in mathematics, according to Hohn, when he proposes alternative approaches, grasps concepts intuitively, or displays autonomy, flexibility, and freedom from perseverative rigidity in his discovery efforts.[44] Now one can define words in any way one chooses, and hence can define creativity so that it means nothing more than "autonomous and flexible discovery." But if this is *all* one means, would it not save endless confusion if one used these particular words instead of a

[44] Hohn (1961), pp. 103-104.

term which both connotatively and denotatively implies a rare form of originality?

As a matter of fact, the very same persons who use "creativity" in the more "democratic" sense of the term also imply in other contexts that the encouragement of true creativity (i.e., in the sense of original accomplishment) in *every* child is one of the major functions of the school. This view is implicit in Bruner's position that the school should help every child reach discontinuous realms of experience so that he can create his own interior culture. It is also implicit in the goal that Suchman proposes for his inquiry training program; namely, that children should be trained to formulate the same kinds of unifying concepts in science which are produced by our most creative scientists. And it is made unambiguously explicit in the following statement by Bruner:

> A small part, but a crucial part of discovery of the highest order is to invent and develop models or "puzzle forms" that can be imposed on difficulties with good effect. It is in this area that the truly powerful mind shines. But it is interesting to what degree perfectly ordinary people can, given the benefit of instruction, construct quite interesting and, what a century ago, would have been considered greatly original models.[45]

How reasonable then is the goal of "teaching for creativity," that is, in the sense of singularly original achievement? A decent respect for the realities of the human condition would seem to indicate that the training possibilities with respect to creativity are severely limited. The school can obviously help in the realization of existing creative potentialities by providing opportunities for spontaneity, initiative, and individualized expression; by making room in the curriculum for tasks that are sufficiently challenging for pupils with creative gifts; and by rewarding creative achievement. But it cannot actualize potentialities for creativity if these potentialities do not exist in the first place. Hence it is totally unrealistic, in my opinion, to suppose that even the most ingenious kinds of teaching techniques that we could devise could stimulate creative accomplishment in children of average endowment. Since creative potentialities are, by definition, sparsely distributed in the population, instances of true creativity can be anticipated no more frequently among the clientele of our schools than among any other population of human beings.

Even "teaching for *critical* thinking" and "teaching for problem solving" are somewhat grandiose slogans, although obviously much more realistic than "teaching for creative thinking." To be sure, the critical thinking and problem-solving abilities of most pupils can be improved. But this is a far cry from saying that most pupils can be trained to become good critical thinkers and problem solvers. Potentialities for developing high levels of these abilities are admittedly much less rare than corresponding potentialities for developing creativity. Nevertheless, there are no good reasons for believing that they are any commoner than potentialities for

[45] Bruner (1961a), p. 30.

developing high general intelligence. Also, in my opinion, variability in genic endowment is probably responsible for more of the measured variance in critical thinking or problem-solving ability than is variability in educational experience.

> Aptitude in problem solving involves a much different pattern of abilities than those required for understanding and retaining abstract ideas. The ability to solve problems calls for qualities (e.g., flexibility, resourcefulness, improvising skill, originality, problem sensitivity, venturesomeness) that are less generously distributed in the population of learners than the ability to comprehend verbally presented materials. Many of these qualities also cannot be taught effectively. Although appropriate pedagogic procedures can improve problem-solving ability, relatively few good problem solvers can be trained in comparison with the number of persons who can acquire a meaningful grasp of various subject matter fields.[46]

From the standpoint of enlightened educational policy in a democracy, therefore, it seems to me that the school should concentrate its major efforts on teaching both what is most important in terms of cultural survival and cultural progress and what is most teachable to the majority of its clientele. As improved methods of teaching become available, most students will be able to master the basic intellectual skills as well as a reasonable portion of the more important subject matter content of the major disciplines. Is it not more defensible to shoot for this realistic goal, which lies within our reach, than to focus on educational objectives that presuppose exceptional endowment and are impossible of fulfillment when applied to the generality of mankind? Would it not be more realistic to strive first to have each pupil respond meaningfully, actively, and critically to good expository teaching before we endeavor to make him a good critical thinker and problem solver?

I am by no means proposing a uniform curriculum and pedagogy for all children irrespective of individual differences. By all means let us provide all feasible special opportunities and facilities for the exceptional child. But in so doing, let us not attempt to structure the learning environment of the *non*exceptional child in terms of educational objectives and teaching methods that are appropriate for either one child in a hundred or for one child in a million.

Expository Teaching as Authoritarianism

Advocates of the discovery method also take advantage of the opprobrium associated with authoritarianism in education to discredit didactic exposition and to further their own cause. In doing this, they not only rely on the straw-man technique of representing a highly exaggerated "tell'm and drill" approach as typical of expository teaching, but also assert that expository teaching is *inherently* authoritarian. When a teacher stands in front of a classroom and presents facts, concepts, and principles, he is, according to Gertrude Hendrix[47] and others, behaving in an authori-

[46] Ausubel (1961), p. 23.
[47] Hendrix (1961), pp. 290, 296, 298.

tarian fashion. This is presumably so because he is allegedly coercing pupils, by the prestige of his position and by his power to dispense reward and punishment, into unquestioningly accepting on faith his own version of "the truth," instead of giving them an opportunity to discover it for themselves. Bruner puts it this way:

> Insofar as possible, a method of instruction should have the objective of leading the child to discover for himself. Telling children and then testing them on what they have been told inevitably has the effect of producing bench-bound learners whose motivation for learning is likely to be extrinsic to the task at hand—pleasing the teacher, getting into college, artificially maintaining self-esteem.[48]

In the first place, I submit that this distressing picture of expository teaching is a bit overdrawn. I do not deny that schools and colleges abound in such teachers. But this characterization is certainly not true of all didactic exposition, nor is it inherent in the method itself. Second, there is nothing inherently authoritarian in presenting or explaining ideas to others as long as they are not obliged, either explicitly or implicitly, to accept them on faith. Didactic exposition has always constituted the core of any pedagogic system, and, I suspect, always will, because it is the only feasible and efficient method of transmitting large bodies of knowledge.

> The deference to authority implied in accepting already discovered relationships has been condemned out of all reason. If students were required independently to validate every proposition presented by their instructors before accepting it, they would never progress beyond the rudiments of any discipline. We can only ask that established knowledge be presented to them as rationally and nonarbitrarily as possible, and that they accept it tentatively and critically as only the best available approximation of the "truth."[49]

Discovery Organizes Learning Effectively for Later Use

I turn now to four propositions recently propounded by Jerome Bruner[50] which, taken together, may be said to constitute a proposed psychological rather than philosophical rationale for the discovery method. First, Bruner hypothesizes that,

> emphasis upon discovery in learning has precisely the effect upon the learner of leading him to be a constructionist, to organize what he is encountering in a manner not only designed to cover regularity and relatedness, but also to avoid the kind of information drift that fails to keep account of the uses to which information might have to be put.[51]

However, learning by discovery, in my opinion, does not *necessarily* lead to more orderly, integrative, and viable organization, transformation, and use of knowledge. It does so only insofar as the learning situation is highly structured, simplified, and skillfully programmed to include a large number of diversified exemplars of the same principle, carefully graded

[48] Bruner (1961b), p. 77.
[49] Ausubel (1961), p. 22.
[50] Bruner (1961a).
[51] *Ibid.*, p. 26.

in order of difficulty. But under these circumstances, one must, in all fairness, attribute these latter outcomes to the teacher's or textbook writer's organization of the data from which the discovery is to be made, rather than to the act of discovery itself.

As a matter of fact, *pure* discovery techniques, as employed by scholars and scientists, could only lead to utter chaos in the classroom. Put a young physics student into a bathtub and he is just as likely to concentrate on the soap bubbles and on the refraction of light as on the displacement principle that he is supposed to discover. In the UICSM program, therefore, students are given a prearranged sequence of suitable exemplars, and from these they "spontaneously self-discover" the appropriate generalization. Elementary-school pupils in the Inquiry Training Program are similarly shown a carefully prepared demonstration film illustrative of a given principle in physics and are then permitted to ask questions answerable by "yes" or "no." Under both of these conditions pupils are engaging in "true," autonomous discovery in the same sense that a detective independently "solves" a crime after a benevolent Providence kindly gathers together all of the clues and arranges them for him in the correct sequence. This type of discovery is perfectly compatible with the automated teaching movement (despite the howls of anguish which teaching machines elicit from discovery enthusiasts) and is obviously a far cry from the kind of discovery that takes place in research laboratories.

Now, in making these observations, I certainly do not wish to create the impression that I quarrel with the UICSM method of inducing discovery, or that I favor the use of raw, unselected, and unorganized data in discovery programs. I quarrel only with Bruner's interpretation that the organizing and integrative effects of learning by discovery are attributable to the act of discovery *per se*, rather than to the structure and organization which are put there by the programmers of such curriculums as the UICSM and the Physical Science Study Committee courses in secondary-school mathematics and physics respectively.

Discovery as a Unique Generator of Motivation and Self-Confidence

Bruner[52] and other discovery enthusiasts[53] perceive learning by discovery as a unique and unexcelled generator of self-confidence, of intellectual excitement, and of motivation for sustained problem solving and creative thinking. I have already acknowledged that discovery techniques are valuable for acquiring desirable attitudes toward inquiry, as well as firm convictions about the existence and discoverability of orderliness in the universe. It is also reasonable to suppose that successful discovery experience enhances both these attitudes and convictions and the individual's feeling of confidence in his own abilities. On the other hand, there is no reason to believe that discovery methods are unique or alone in their ability to effect these outcomes.

[52] Bruner (1960, 1961a, 1961b).
[53] Suchman (1961) p. 3; Hendrix (1961) pp. 292-293.

As every student who has been exposed to competent teaching knows, the skillful exposition of ideas can also generate considerable intellectual excitement and motivation for genuine inquiry, although admittedly not quite as much perhaps as discovery. Few physics students who learn the principle of displacement this way will run half-naked through the streets shrieking, "Eureka." But then again, how many students of Archimedes' ability are enrolled in the typical physics or mathematics class? How comparable to the excitement of Archimedes' purely autonomous and original discovery is the excitement generated by discovering a general formula for finding the number of diagonals in an *n*-sided polygon after working problems one through nine in the textbook? And what happens to Archimedes Junior's motivation and self-confidence if, after seventeen immersions in the tub, he has merely succeeded in getting himself soaking wet?

Careful study of the psychological experiment cited by Bruner,[54] by way of illustrating the allegedly unique motivational and inspirational values of discovery methods, leaves me no more convinced than I was before. Bruner describes a psychological experiment in probability learning with a two-choice apparatus in which "the payoff sequence is arranged at random and there is no pattern. Some subjects quickly begin to catch on to the fact (and rightly so in this case), that "things are happening quite by chance . . . [and] very soon revert to a much more primitive [and empirically more successful] strategy wherein *all* responses are allocated to the side that has the greater payoff." Other more trusting and optimistic souls, however, persist in believing that "there *is* some pattern to be found in the sequence . . . i.e., that regularities are discoverable," and hence keep trying one unsuccessful hypothesis after another, in each of which "the number of responses given to each side is roughly equal to the proportion of times it pays off."

"What has [all] this to do with the subject at hand?" asks Bruner.

> For the person to search out and find regularities and relationships in his environment, he must be armed with an expectancy that there will be something to find and, once aroused by expectancy, he must devise ways of searching and finding. One of the chief enemies of expectancy is the assumption there is nothing one can find in the environment by way of regularity or relationship.[55]

I can thoroughly appreciate the logic of this argument, but I still cannot see what relevance it has for the issue regarding the unique motivational virtues of the discovery method. All Bruner is saying here is that, in the absence of a firm conviction about the existence of discoverable regularities in a particular problem solving situation, one will resort to simple trial-and-error behavior—just like Thorndike's cats in the puzzle-box. But why should discovery methods necessarily inspire any more confidence in the existence of discoverable regularities in the universe than the method of didactic exposition which, after all, is dedicated to the presen-

[54] Bruner (1961a), pp. 23-24.
[55] Bruner (1961a), p. 24.

tation and explication of these regularities? It is true that successful discovery experience strengthens such confidence; but unsuccessful experience has precisely the opposite effect—as demonstrated by the resurgence of magical and superstitious thinking that follows in the wake of failure to find patterns of orderliness in nature.

Discovery as a Prime Source of Intrinsic Motivation

A related motivational proposition put forth by Bruner states that "to the degree that one is able to approach learning as a task of discovering something rather than 'learning about it,' to that degree will there be a tendency for the child to carry out his learning activities with the autonomy of self-reward or, more properly, by reward that is discovery itself."[56] Bruner feels that learning by discovery frees the child from the immediate control of such extrinsic motives as high marks, desire for parental and teacher approval, and a need to conform to the expectations of authority figures. In support of this hypothesis, he cites research data showing that early "over-achievers" in school tend to be conformists, to overdevelop rote abilities, and to be deficient in analytic and critical thinking ability.[57]

In my opinion, however, there is no existing or necessary association between a discovery approach to learning and intrinsic motivation, on the one hand, and a reception approach to learning and extrinsic motivation, on the other. But because of certain cultural influences on personality development in our type of social system, I would tend to postulate precisely the opposite kind of relationship; namely, that discovery learning is more often associated with extrinsic motivation than is reception learning. Whether an individual primarily manifests intrinsic or extrinsic motivation in learning, it seems to me, is largely a function of two factors: (a) how much intrinsic self-esteem he possesses, and hence how great his relative need is for compensatory extrinsic status; and (b) the strength of his cognitive needs in their own right, that is, his need to acquire knowledge and to understand his environment as influenced by genic and temperamental determinants and by previous, satisfactory learning experience.

On these grounds, I would think that a more plausible interpretation of Bruner's data is that it is the learner who is lacking in intrinsic self-esteem who develops an overpowering need, both for such external symbols of achievement as high grades and teacher approval and for the glory and prestige associated with independent discovery in our culture. Hence the overachiever is typically a child who is deficient in intrinsic self-esteem. He relies unduly on rote memorization both because it is the surest route to the high marks and the teacher approval he craves, and because (on account of his anxiety and impaired self-esteem) he lacks the courage and self-confidence to improvise in novel, problem solving test situations.[58]

[56] Bruner (1961a), p. 26.
[57] *Ibid.*, p. 26.
[58] Ausubel, Schiff, and Goldman (1953).

At the same time, however, to bolster his impaired self-esteem, he aspires to the prestige and status which, in our culture, can only be achieved through the exercise and hypertrophy of White's so-called "competence motive," which Bruner equates with the drive to discover.[59]

What I am suggesting, therefore, is that rather than being uniquely powered by intrinsic motives, learning by discovery or overvigorous exercise of the drive for competence reflects a lack of intrinsic self-esteem and a compensatory need to overachieve with respect to the external symbols and trappings of successful accomplishment. To be sure, there are individuals who are driven to discover principally because of a compelling need to express their individuality or creative urges, to find the answers to haunting problems, or to discharge their feelings of moral obligation to the social community. But in our particular culture with its emphasis on status, prestige, ego aggrandizement, and material rewards—especially among individuals who lack intrinsic self-esteem—such motives for discovery tend to be the exception rather than the rule.

Discovery and the "Conservation of Memory"

In the last of his four propositions, Bruner claims unique retention advantages for material learned by the discovery method. And again he illustrates his point by citing an experiment of questionable relevance to the principle he proposes. Pairs of words are presented to twelve-year-old children:

> One group is simply told to remember the pairs, that they will be asked to repeat them later. Another is told to remember them by producing a word or idea that will tie the pair together in a way that will make sense to them. A third group is given the mediators used by the second group when presented with the words, to aid them in tying the pairs into working units.[60]

The wholly predictable results were that the uninstructed children remembered least, and that the "children who developed their own [mediators] for relating the members of each word pair . . . did better than the children" who were given the mediators by exposition.[61]

Why don't these findings support Bruner's proposition regarding the beneficial influence of discovery on retention? First, the learning task in this experiment is hardly comparable to the situation where children must discover a generalization inductively and autonomously. In Bruner's experiment, the entire content of what is to be learned is *given* and the child need only supply a mediating link from his own cognitive structure which is sufficiently inclusive to subsume both members of the word pair. Now isn't this precisely the paradigm for meaningful reception learning in which materials are presented, and the learner then tries to incorporate them into his own cognitive structure by relating them to more inclusive established ideas? The superior retention of the children who used mediators, as compared to those who were uninstructed, is attributable

[59] Bruner (1961a), pp. 27-28.
[60] *Ibid.*, p. 31.
[61] *Ibid.*, p. 32.

to the facilitating effect on retention which occurs when one helps learners convert an ostensibly rote reception learning task into a more meaningful type of reception learning. The discovery variable, in my opinion, is not implicated at all in this experiment.

Second, the superior retention of the word pairs related to the *self*-constructed mediators simply reflects the value of using more stable, relevant, and familiar subsumers within cognitive structure as anchoring posts for new learning materials. Mediators that children choose themselves are obviously more relevant and familiar to them than mediators suggested to them by others. The fact that they are *self*-constructed is quite beside the point.

Lastly, even within the framework of a reception learning interpretation, we should be careful about generalizing these findings to classroom pedagogy. In a short and easy learning task dealing with familiar materials, it is quite feasible for children to construct their own organizing concepts. But one could not legitimately conclude from this experiment that it would also be feasible for them to construct their own organizers for large bodies of complex and unfamiliar learning materials in subject-matter areas where their level of sophistication is necessarily low.

Research Evidence

I now propose to examine a representative sample of the more significant published research bearing on the discovery method. The professional literature on "learning by discovery" regrettably exemplifies, as clearly as any research in education, the all too frequent hollowness of the hallowed phrase, "research shows."[62] Careful examination of what research supposedly "shows" in this instance yields these three disheartening conclusions: (a) that most of the articles most commonly cited in the literature as reporting results supportive of discovery techniques actually report no research findings whatsoever, consisting mainly of theoretical discussion, assertion, and conjecture; descriptions of existing programs utilizing discovery methods; and enthusiastic but wholly subjective testimonials regarding the efficacy of discovery approaches; (b) that most of the reasonably well-controlled studies report negative findings; and (c) that most studies reporting positive findings either fail to control other significant variables or employ questionable techniques of statistical analysis.

In view of the apparently sound theoretical reasons listed earlier (under "rationale") for predicting modest advantages in learning, retention, and transferability attributable to the use of discovery techniques, these largely equivocal and negative findings are somewhat disappointing. In many cases, of course, findings are equivocal simply because of failure to control such other relevant variables as the rote-meaningful, the inductive-deductive, the verbal-nonverbal, and the intramaterial organization di-

[62] See Martin Mayer (1961) p. 67, for a critique of the phrase, "research shows."

mensions of learning, while varying the reception-discovery factor. In other instances, it is quite possible that negative findings are less indicative of inadequacies in the underlying theory than of inadequacies in research design, which unfairly load the dice against the possibility of confirming hypotheses. And as far as long-term curriculum studies are concerned, one might anticipate that any short-term advantages accruing from the use of discovery techniques *per se* would be more than offset by its time-consuming aspects, and the consequent low rate of acquiring subject matter content.

Long-Term Studies

Despite their frequent espousal of discovery principles, the various curriculum reform projects have failed thus far to yield any research evidence in support of the discovery method. This is not to say that the evidence is negative, but rather that there just isn't any evidence, one way or the other—notwithstanding the fact that these projects are often cited in the "discovery" literature under the heading, "research shows." For one thing, the sponsors of some of these projects have not been particularly concerned about *proving* the superior efficacy of their programs, since they have been thoroughly convinced of this from the outset. Hence, in many instances they have not even attempted to obtain comparable achievement test data from matched control groups. And only rarely has any effort been expended to prevent the operation of the crucial "Hawthorne Effect," that is, to make sure that evidence of superior achievement outcomes is attributable to the influence of the new pedagogic techniques or materials in question, rather than to the fact that the experimental group is the recipient of *some* form of conspicuous special attention; that *some*thing new and interesting is being tried; or that the teachers involved are especially competent, dedicated, and enthusiastic, and receive special training, attend expense-free conventions and summer institutes, and are assigned lighter teaching loads.

But even if the sponsors of the curriculum reform movements were all imbued with missionary research zeal, it would still be impossible to test the discovery hypothesis within the context of curriculum research. In the first place, a large number of other significant variables are necessarily operative in such programs. The UICSM program, for example, not only relies heavily on the principle of self-discovery of generalizations, but also on an inductive approach, on nonverbal awareness, on abundant empirical experience, on careful sequential programming, and, above all, on precise, self-consistent, unambiguous, and systematic verbal formulation of basic principles. To which variable, or to which combination of these variables and the "Hawthorne Effect" should the success of this program be attributed? Personally, for reasons enumerated earlier in this article, I would nominate the factor of precise and systematic verbal formulation rather than the discovery variable. (Students enrolled in the UICSM program learn more mathematics, in my opinion, *not* because they are required to discover generalizations *by themselves*, but because they have at their disposal a systematic body of organizing, explanatory,

and integrative principles which are not part of the conventional course in secondary-school mathematics. These principles illuminate the subject for them and make it much more meaningful, coherent, and exciting.) Finally, "measurement is [always] a difficult problem [in such research] because standardized achievement tests both cover various traditional subject matter units deliberately ignored by these new curricula, as well as fail to measure knowledge of the more modern concepts, which they emphasize."[63]

Preliminary findings of the Inquiry Training Program also fail to support the discovery hypothesis.[64] Inquiry training did not significantly improve the quality of the questions asked by the subjects or facilitate their grasp of concepts. It is true that those pupils who were trained in the particular inquiry techniques employed did ask a significantly greater number of the right kinds of questions in the criterion situation than did pupils in the control group. But isn't this precisely what they were trained to do? Pupils who are trained to ask certain kinds of questions in one situation will naturally tend to ask more of the same kinds of questions in an analogous criterion situation than will pupils who do not receive this particular inquiry training. The transfer value of such training can only be demonstrated by using criteria which are both more independent of the particular training procedures employed, and more reflective of its goals than of its techniques. Currently, therefore, more definitive evidence of transfer is being sought.

A number of long-term curriculum studies in the older literature are frequently cited as providing empirical support for the discovery method. Using basically identical research designs, McConnell,[65] Thiele,[66] and Swenson[67] compared the so-called "drill" and "generalization" methods of teaching number facts to second-grade pupils. The drill approach emphasized rote memorization and mechanical repetition of authoritatively presented facts and rules, whereas the generalization method stressed meaningful perception of relationships and derivation of generalizations. Pupils taught by the generalization method also had the added benefit of concrete props in the McConnell study, and of organized grouping of materials in the Swenson study. A well-known study by G. Lester Anderson[68] was also conducted along very similar lines, but used fourth-grade pupils.

Needless to say, the generalization method was found to be superior in all four studies, except in criterion situations calling for immediate and automatic recall of knowledge relatively unchanged in form from that learned in the training situation. Much more salient than the discovery variable in each of these studies, however, was the rote-meaningful factor; and in two of the studies, the differential availability to the "generaliza-

[63] Ausubel and Fitzgerald (1961).
[64] Suchman (1959).
[65] McConnell (1934).
[66] Thiele (1938).
[67] Swenson (1949).
[68] Anderson (1949).

tion" group of concrete visual aids or of organized grouping of learning materials, further complicated interpretation of the findings. It should also be remembered that it is precisely in relation to this age group of young learners first entering the stage of concrete logical operations, and still completely unsophisticated in a new, difficult, and abstract subject matter, that the efficacy and feasibility of the discovery method are least disputed. The time-cost factor is relatively unimportant at this age level, both because large bodies of subject matter cannot be learned through expository teaching anyway, and because a transitional phase of subverbal, intuitive understanding is developmentally necessary in the acquisition of complex abstractions. However, it would be quite unwarranted to generalize from these findings that meaningful expository teaching of twelfth-grade mathematics is less efficacious than learning by discovery.

Short-Term Studies

The well-known Gestalt writings on insightful problem solving by Köhler,[69] Wertheimer,[70] Duncker,[71] and Katona[72] are traditionally cited in the "discovery" literature as supportive of the discovery method of teaching. Actually, however, the Gestalt emphasis on insight deals only with the rote-meaningful dimension of problem solving and has no bearing whatsoever on the relative efficacy of the expository (reception) and discovery approaches. As pointed out earlier, both reception and discovery learning may each be rote or meaningful, depending on the conditions under which learning occurs. The Gestalt theorists merely insist that the concept of insight is more valid than the Thorndikian trial-and-error or the Hullian point of view in explaining problem-solving behavior that lies within an organism's verbal or subverbal reasoning ability.

Köhler's, Wertheimer's, and Duncker's monographs also do not really report research findings in the usual sense of the term. They are, rather, elaborate and sophisticated analyses of the nature and conditions of insightful problem solving from the Gestalt point of view, which use observations, informal experiments, anecdotes, and demonstrations to illustrate the principles under discussion. Katona's studies, on the other hand, are more genuinely experimental but, at the very most, demonstrate that understanding of a principle, as opposed to rote memorization, leads to superior retention[73] and transfer. One experiment in particular shows

[69] Köhler (1925).
[70] Wertheimer (1959).
[71] Duncker (1945).
[72] Katona (1940).
[73] A neo-behaviorist explanation of this "superior retention" finding is that understanding of a principle reduces the sheer volume of *what* has to be remembered by rendering the details of the learning task reconstructable from memory of the principle itself (Osgood, 1953, p. 570). The writer's own interpretation stresses the nonarbitrary and substantive incorporability (anchorability) of meaningfully learned material within cognitive structure (Ausubel, in press).

that a rotely memorized verbal principle is less transferable to new problems than is mere empirical experience with problems exemplifying the principle in question.[74] But this only indicates that meaningful understanding of a principle, even when unverbalized, is more transferable than rote memorization. It does not suggest that newly emerging nonverbal awareness is *always* more transferable than verbal understanding.

This latter study by Katona is reminiscent of Gertrude Hendrix' previously discussed experiment,[75] but Hendrix carried the design and argument one step further. She also included another control group of subjects who *first* acquired *meaningful* nonverbal awareness of a principle, and *then* attempted immediate verbalization. She showed that her experimental subjects, who were sent out of the room while these control subjects were attempting to verbalize nonverbal awareness, were not only superior in transfer power to the control subjects who had merely learned the principle through verbal exposition, but were also superior to this other control group as well, which had acquired nonverbal awareness *prior* to verbalization. Hendrix interpreted her findings to mean that the full transfer power and substance of an idea are already present in the emerging subverbal insight, and that this dawning subverbal awareness, when left unverbalized, is *invariably* more transferable than when put into words. I have already explained in detail why I think that immediate verbalization of insight reduces transferability *only* when pupils are in the process of learning difficult abstract propositions, or when older individuals are in the early unsophisticated stages of learning a new discipline, and why I believe that verbalization enhances transferability under *all other* circumstances. At this point I only wish to consider methodological and statistical aspects of Hendrix' experiment.

In reporting her study, Hendrix frankly acknowledged the difficulty of devising both "a good behavioral test for the achievement of unverbalized awareness," and a suitable test of transfer. There was also the formidable problem of deciding "whether subjects were obtaining the correct answers through counting or through applying the generalization."[76] With respect to the maintenance of necessary controls, Hendrix freely admitted, furthermore, that it was difficult to prevent "communication and discussion among members of the different method groups in the time interval between learning and testing," and to administer the various tests and experimental procedures without revealing to the subjects that an experiment was in progress.[77]

In addition to all of these acknowledged measurement, evaluation, and control problems, only forty subjects were available for all three groups, and even this relatively small number was achieved only by pooling

[74] Katona (1940), p. 89.
[75] Hendrix (1947).
[76] *Ibid.*, p. 203.
[77] *Ibid.*, pp. 203-204.

results from three very different kinds of experimental populations, for whom a test of homogeneity of variance was not even reported. Both the small experimental population, and the undetermined comparability of its three separate components, rendered untenable Hendrix' assumption that random assignment of subjects to the three treatment groups equalized these groups with respect to the influence of the uncontrolled variables.

Lastly, the difference on the transfer test between the "verbal exposition" group and the "nonverbal awareness group" was only significant at the .12 level, and the corresponding difference between the "nonverbal awareness" group and the group which had verbalized their nonverbal awareness was only significant at the .33 level. Mathematicians, of course, may have their own norms of which I am unaware, but neither of these levels of significance is regarded very seriously by either statisticians or educational research workers. Taking all of these factors into consideration, therefore, the experimental foundations for the far-reaching conclusions which Hendrix draws from these findings can hardly be considered impressively firm.

We come finally to a series of experimental studies in which varying amounts of guidance were furnished to different groups of subjects in problem solving situations. Stacey[78] studied the effects of directed *versus* independent discovery on solving a group of meaningful problems, each of which required subjects to identify the one item in a set of five that did not "belong." He found that active participation and self-discovery were more efficacious for learning than was "passive participation involving only recognition or identification of information" presented to the learner. This finding, of course, was wholly predictable, since the fostering of such complete passivity in problem-solving experience as providing the correct answer for each problem as well as the reason for same is self-evidently inadvisable and is seldom if ever practiced today. But even so, surprisingly enough, significant differences were *not* found between these extreme treatment groups on a transfer test.

Using similar kinds of material, but with college students rather than sixth-grade pupils, Craig[79] obtained results even less favorable for the discovery method. His "directed" group, which received a brief verbal explanation of principles during the training period, learned and retained significantly more principles than did his "independent group" which had no help whatsoever in the training situation. As in the Stacey study, however, the two groups were not significantly different with respect to mean score on a transfer test. Kittell's findings in a similar type of experiment with sixth-grade pupils[80] were, if anything, even more damaging to the discovery cause than were Craig's. The group in his experiment which received an "intermediate" amount of guidance, but nevertheless an amount which was somewhat *greater* than that received by

[78] Stacey (1949).
[79] Craig (1956).
[80] Kittell (1957).

Craig's "directed" group (*i.e.*, explanation of principles *plus* organization of materials) was superior in learning, retention, *and* transfer to groups receiving either less or more direction. Pooling the findings of these three studies, therefore, the evidence seems to support the conclusions that in this type of problem-solving exercise, guidance in the form of providing information about underlying principles facilitates learning, retention, and possibly transfer more than either the provision of less guidance or the furnishing of specific rules for each of the problems.

Haselrud and Meyers[81] recently conducted a coding study, with college students, which was explicitly designed to rebut the Craig and Kittell findings. However, their subjects exhibited significantly better learning on problems where the coding rule was given than where it had to be independently derived. Furthermore, on a delayed transfer test, there was *no* difference whatsoever in the number of correct code identifications made for the problems learned originally with the rule given and the problems learned originally by independent derivation of the code. Nevertheless, on the grounds that the *gain* from the first to the second test was greater for those problems where the rule had been independently derived, the investigators concluded that principles which are independently derived are more transferable than principles for which the rule is given. This, in my opinion, is equivalent to saying that, of two matched race horses trained by methods A and B respectively, who are tied at the end of the criterion race, the horse trained by method B is *really* superior because at the half-way mark he was one lap behind the horse trained by method A, but nevertheless caught up to him by the end of the race.

A final study in this area by Kersh[82] yielded results practically identical to those of Craig, Kittell, and Haselrud and Meyers on the test of original learning, but results opposite to those of Kittell on the delayed retest. By using an ingenious research design, however, Kersh was able to explain this latter finding on the basis of the greater interest and motivation, on the part of the "independent discovery" group, to continue practicing the task during the test-retest interval. Kersh concluded that discovery experience *per se* does not enhance understanding or meaningfulness.

Summary and Conclusions

Learning by discovery has its proper place among the repertoire of accepted pedagogic techniques available to teachers. For certain designated purposes and for certain carefully specified learning situations, its rationale is clear and defensible. But learning by discovery also has its own elaborate mystique. Its legitimate uses and advantages have been unwarrantedly extrapolated to include both educational goals and levels of intellectual maturity, levels of subject matter sophistication and levels of cognitive functioning for which it is ill-adapted—and for reasons which

[81] Haselrud and Meyers (1958).
[82] Kersh (1958).

derive from sheer dogmatic assertion; from pseudonaturalistic conceptions about the nature and conditions of intellectual development; from outmoded ideas about the relationship between language and thought; from sentimental fantasies about the nature of the child and the aims of education; and from uncritical interpretation of the research evidence.

The discovery method can be used most effectively when the learner is in the concrete stage of logical operations and is dependent both on concrete-empirical props and on a preliminary phase of intuitive, subverbal insight for the learning of complex abstractions. It can also be advantageously employed in the early stages of teaching older individuals a difficult new discipline in which they are as yet very unsophisticated. The latter stage, however, is as temporary as the subject-matter unsophistication itself, and cannot be considered a developmental type of limiting condition as in the case of younger learners.

Because of its serious time-cost disadvantage, learning by discovery cannot possibly be a feasible method of teaching subject matter content—except, of course, in the two circumstances just mentioned. The time-cost factor outweighs by far any modest "vividness," motivational, and problem-solving advantages associated with its use.

The discovery method also has obvious uses and advantages in teaching problem-solving techniques and methods of scientific inquiry within a given discipline, and in testing for meaningful comprehension of material learned through didactic exposition. Although the promotion of problem solving ability is a legitimate educational objective in its own right, it can hardly be considered a primary goal of education. Also, since problem solving methods are not feasible for transmitting large bodies of subject matter content, we cannot depend on students somehow acquiring all of the subject matter they need to know during the course of involvement in a discovery program. Even from the standpoint of enhancing problem-solving ability and even among a population of gifted pupils, excessive emphasis on discovery methods would ultimately defeat its own ends because students would not acquire enough of the knowledge they need to solve problems adequately.

Programs dedicated to teaching the "heuristics of discovery" fail to appreciate that critical thinking ability can only be enhanced within the context of a specific discipline. Furthermore, since the major goals of the science student, unlike those of the scientist, are not to formulate and verify new principles but to learn the rudiments of a scientific discipline as well as something of the spirit and methods of scientific inquiry, he cannot accomplish these objectives by playing the role of junior scientist.

The proposition that, *really* to possess an idea or to call it one's own, one must discover it oneself, is not only lacking in face credibility, but also repudiates the basic educational assumption on which the transmission of human culture rests; namely, that the accumulated discoveries of mankind can be effectively learned through verbal exposition and need not be rediscovered anew by each individual in every generation. Most

of the knowledge anyone *really* possesses is discovered and transmitted to him by others; all we can reasonably expect most individuals to do, as far as making knowledge their own is concerned, is to integrate this knowledge meaningfully within their own cognitive structures.

Meaningful knowledge is not an exclusive product of creative nonverbal discovery. For potentially meaningful *presented* material to become meaningful knowledge, the learner need only adopt a set to incorporate its substantive import nonarbitrarily within his cognitive structure. The assertion that abstract concepts and generalizations are forms of glib verbalism unless the learner discovers them himself is predicated (a) on a misrepresentation of verbal learning as a passive, rote phenomenon; (b) on confusion between the reception-discovery and the rote-meaningful dimensions of learning; and (c) on unwarranted generalization to adolescents and adults of children's dependence on concrete-empirical props in comprehending and manipulating abstract ideas.

Gertrude Hendrix' proposition that both the substance of an idea and its transfer power reside entirely within "dawning subverbal awareness," rests, in my opinion, on an outmoded nominalistic conception of the role of language in thought. Verbalization does more than attach a convenient symbolic handle to an idea; it is, rather, part of the very process of thought itself and makes possible a qualitatively higher, more precise, more general, and more transferable type of understanding. However, premature verbalization of a subverbal insight by a child or unsophisticated adult could conceivably inhibit transfer because an ambiguous, ineptly stated, and marginally competent verbal representation of an idea probably has less functional utility in problem solving than the ordinarily more primitive and less efficient subverbal representation of the same idea.

The organizing and integrative effects of learning by discovery are not attributable to the act of discovery *per se*, but to the careful sequential organization and selective schematization which are deliberately introduced into the so-called "discovery" curriculums by their sponsors. The use of "pure" discovery techniques, as employed by scholars and scientists, could only lead to utter chaos in the classroom. Contrary, also, to the assertion of discovery enthusiasts, there is nothing *inherently* authoritarian in presenting ideas or knowledge to others, as long as they are not obligated to accept it on faith.

Discovery methods are, by no means, unique in their ability to generate self-confidence, intellectual excitement, and sustained motivation for learning. Good expository teaching can accomplish these very same objectives. It is also unrealistic to attribute to contrived discovery experiences in the classroom the same kind of inspirational stimulation that is generated by "real" discovery in the research laboratory. Neither are discovery methods unique in inducing intrinsic as against extrinsic motivation for learning. As a matter of fact, it is precisely the individual in our type of culture who lacks intrinsic self-esteem and has strong compen-

satory needs for prestige, status, and ego aggrandizement, who is most likely to strive for the glory associated with original discovery.

Actual examination of the research literature allegedly supportive of learning by discovery reveals that valid evidence of this nature is virtually nonexistent. It appears that the various enthusiasts of the discovery method have been supporting each other research-wise, by taking in each other's laundry, so to speak; that is, by citing each other's opinions and assertions as evidence and by generalizing wildly from equivocal and even negative findings. The different curriculum reform projects using discovery techniques have not attempted the well-nigh impossible task of isolating the effects of the discovery variable from the effects of other significant variables and, in most instances, have not even attempted to collect adequate control data with which to evaluate the efficacy of a given project as a whole. Studies comparing "drill" and "generalization" methods of teaching the number facts have provided evidence about rote *versus* meaningful learning rather than evidence about the effectiveness of the discovery method; and, in any case, these studies deal with an age group and type of learning for which the value and feasibility of self-discovery are least disputed.

Findings from short-term research studies are similarly disappointing. Because of questionable methodological and statistical points in Hendrix' experiment regarding the relative transferability of verbalized and unverbalized subverbal insight, any psychological or pedagogic inferences from the reported data are, in my opinion, completely unwarranted. Lastly, research on meaningful verbal and symbolic problem solving indicates, on the whole, that providing guidance to the learner, in the form of verbal explanation of the underlying principles, almost invariably facilitates learning and retention, and sometimes transfer as well. *Self*-discovery methods, in contrast, are relatively much less effective.

Discovery methods are often rationalized in terms of the currently fashionable slogan that the school's chief responsibility is to make every child (or nearly every child) a critical and creative thinker. This incredible notion is based on the assertion that all discovery activity, irrespective of degree of originality, is qualitatively of one piece; on a watered-down, more "democratic" definition of creativity, broad enough to include *any* type of independent discovery; and on naive *tabula rasa* conceptions of human plasticity which hold that, even if a given child has no creative potentialities, inspired teaching can create them anyway. Actually, creativity is a rare gift. The school can only help in actualizing its expression in those rare individuals who already possess the necessary potentialities.

There is a pressing need in these troubled times to dispense with sentimental fantasy and euphoric slogans and to get on with the realistic business of education. This means helping schools do well the kinds of jobs that schools can *really* do; namely, developing more efficient and appropriate ways of selecting, organizing, and presenting significant

knowledge to students so that they can learn and retain it meaningfully—both as an end in itself and as a basis for future learning and problem solving.

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The Assistant Principal: Status, Duties, and Responsibilities

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THE position of assistant principal in the American secondary school has evolved without an adequate sense of direction or underlying philosophy. Most early secondary schools in America were relatively small, limited in breadth of purpose, and administratively uncomplicated. As secondary schools grew in size and complexity, however, the principal often was provided with help in the form of professional and nonprofessional assistants. The most common title designations of these professional assistants other than the assistant principal, vice-principal, and associate principal, have been department head, adviser, counselor, dean of boys, and dean of girls.

The dean has performed some functions which guidance counselors now perform as well as a larger number of activities presently identified with the assistant principal. He has continued in some schools as a person next in authority to the assistant principal. In a few schools, he has assumed responsibility for the coordination of the guidance program.

The three title designations—associate principal, vice-principal, and assistant principal—have embraced similar functions, and may be used somewhat interchangeably, depending upon the geographic location. Approximately ninety per cent of the school systems of the country now designate the person next in authority to the principal as either assistant principal or vice-principal, with the title assistant principal being used more often.

The scope of duties and responsibilities of the assistant principal has changed from a narrow range of clerical and routine activities to a broad range of administrative and supervisory functions. Some authorities view this position as a proper internship for the principalship, while others think of it as a career position within itself. More persons see the position as one embracing both of these general functions, depending upon the personal qualities and ambitions of the person involved and upon the particular school situation. The effective full-time assistant principal in the secondary school of the present and immediate future must be an educational leader whose training and talents will closely approximate those of the principal.

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Selection and Annotation of References

Little was written before 1953 concerning the role and status of the assistant principal. Increased attention to the topic has been given in the literature since 1953, but there is a need for more comprehensive information, including greater attention to the philosophical aspects of the position.

The selected annotated bibliography here includes only those references which have a direct bearing on the assistant principalship. The brief unannotated portion of the bibliography includes some of the articles which deal with related administrative functions.

The salient features of each item in the annotated references have been included. The reader who is interested in a chronological sequence of background information will find the following references helpful: Van Eman, 1926; Wright, 1939; and the joint article by Boardman, Gran, and Holt, 1946.

Annotated References

BARRATT, THOMAS K., "Assistant Principals," *American School Board Journal*, 130:56, April 1955.

Assistant principals are becoming more numerous and more important in secondary schools. The position should be given greater professional prestige by providing appropriate salary and authority. Specifications for this position should be:

1. Educational background—about the same as that of the principal
2. Age—comparatively young, with growth potential
3. Personal qualities—professional competence and interest; patience, tact, and self-restraint; cheerful outlook; personality acceptable to the principal
4. Philosophy—in general agreement with administrative personnel
5. Salary—in excess of that of teachers with comparable training and service.

BAUER, HAROLD E., "What Is a Vice Principal in the Los Angeles City Schools?" *California Journal of Secondary Education*, 32:408-10, November 1957.

In different parts of the country, the position of administrative assistant is designated variously as assistant principal, vice principal, associate principal, or dean. Duties and responsibilities vary from a limited scope of authority to broad and important functions. In Los Angeles the position is designated as vice principal, and the functions are broad. The preliminary eligibility requirements are: (1) must have taught in the city for 5 years, (2) must hold the master's degree, and (3) must hold the secondary administrator's credential. The candidate is then eligible for: (a) a written test, (b) an evaluation of training and experience, and (c) an interview before a committee. Candidates are placed in rank order, and the eligible list is forwarded to the board of education.

A "duty statement" was drawn up by the vice principal's association of the city, and was approved by the board of education. There are 12 listed duties of major or prime responsibility, and 6 additional functions in which the assistant shares responsibility.

BLUME, F. L., and OTHERS, "Duties and Responsibilities of High School Principals and Assistant Principals," Committee Report. *Bulletin of the National Association of Secondary-School Principals* (NASSP Bulletin) 30:9-12, December 1946.

This concerns a report prepared by a committee in the Saint Paul, Minnesota, public schools. The report lists specific responsibilities of high-school principals, and suggests which duties should be delegated or shared, and which ones should be retained by the principal.

BOARDMAN, CHARLES W.; GRAN, JOHN M.; and HOLT, AGNES E., "The Duties and Responsibilities of the Assistant Principal in the Secondary School," *NASSP Bulletin*, 30:3-11, March 1946.

Boardman stated in 1946 that there was too little objective evidence about duties and responsibilities of assistant principals. This position should serve as an internship for the position of principal, and should include experiences in curriculum, guidance, and supervision. Standardization of the position in all secondary schools of the United States is neither feasible nor desirable, but greater uniformity is desirable.

Gran summarized questionnaire replies from 21 assistant principals in Wisconsin. They were found to have administrative responsibilities, either primary or shared, in areas of pupil accounting, curriculum, and school control. Some cooperative activities were of a supervisory nature, but specific duties in supervision were negligible. Some responsibility was shared for developing supervisory programs and for improving specific services.

Holt reported results of questionnaire replies from 35 assistant principals in Minnesota. While the position tended to be somewhat clerical in nature, the trend was toward broader areas of responsibility. Shared responsibilities were increasing in areas of curriulum, school control, and extraclass activities. The trend toward greater authority brings with it a requirement of greater professional preparation.

BOLDEN, HOWARD F., "Attitudes of High School Assistant Principals Toward Their Duties and Responsibilities," *NASSP Bulletin*, 40:20-25, November 1956.

This is a summary of an unpublished doctoral dissertation. The author attempted to assess by questionnaire the attitudes of assistant principals toward certain duties assigned to them. Replies were received from 120 assistant principals located in various medium-large cities. Summary of opinions concerning certain duties and responsibilities are:

1. Those relating to over-all direction of the school program are more appropriate than those of a managerial nature.
2. Supervisory activities relating to professional and pupil personnel, instruction, and guidance are appropriate.
3. Those relating to pupil welfare are appropriate, but "police" activities such as detention room supervision are not.
4. Those related directly to control, attendance, and educational programs of pupils are appropriate, but routine clerical tasks are not.
5. Those which concern orientation, supervision, and assignment of substitute teachers are appropriate, but those concerning administration of the substitute service and the calling of substitutes are inappropriate.
6. The importance of school-community relations is recognized, but opinions differ as to the scope of activities.

BRANDES, LOUIS G., "The Position of the Subordinate Administrator in the Secondary School," *NASSP Bulletin*, 40:46-52, May 1956.

This is a discussion based largely on a survey of the literature. Major items of concern are: administrator-pupil ratios, title designation, necessity for assistants, selection of assistants, duties and responsibilities, and the principal's responsibility for his assistants. Summary of finding are:

1. The number of administrators is determined variously by wealth of the district, program of services attempted, size of school, and physical make-up of school plant.
2. The title varies, but "assistant principal" is used most frequently.
3. Principals of large schools need to delegate specific responsibilities to competent assistants if the school is to operate efficiently and effectively.
4. Principals and superintendents should work together in selecting assistants. Qualifications of assistants should approximate those of the principal.
5. Duties are great in number and varied in nature.
6. The principal is responsible for clearly defining duties and responsibilities of his assistants.
7. Budgeting for administrative purposes should reflect a growing concept and a growing need.

GILBURT, SAMUEL G., "On Being an Assistant Principal," *Clearing House*, 31:423, March 1957.

Duty assignments of assistant principals have changed from chores of a clerical and disciplinary nature to functions much broader in scope. As presently conceived, the position requires skills in broad areas of school organization, supervision, and administration. The concept of the assistant has changed from the authoritarian, inspectoral, paternalistic outlook to that of one conversant with such things as child growth, teacher training, and community relations.

The assistant principal should: (1) inspire confidence, (2) inspire teachers to improve and become self-directive, (3) get pupils and teachers to assume leadership, (4) if necessary, criticize policies and practices, but not people, (5) be a consultant rather than a discoverer of weaknesses, and (6) use persuasion rather than coercion as a basic tool.

HARLOW, JAMES G., "Building the Principal's Team," *NASSP Bulletin*, 41:47-54, February 1957.

The principal of the near future will be the guide of an administrative team rather than the sole administrator of a school. Powerful social forces are causing changes in the principalship which require it to become a team activity. There is need for a clearer design in criteria to guide the division of labor among members of the administrative team.

Educational administration has responsibility for the maintenance of five life functions: (a) educational planning, (b) assembling and allocating material and human resources, (c) stimulation toward achievement of desirable educational goals, (d) coordination of the various elements of the school enterprise, and (e) evaluation of student and staff progress toward goals. Thus, planning, allocating, stimulating, coordinating, and evaluating form the basis for a design of organization of the principal's team.

HURWITZ, HOWARD L., "A Day in the Life of an Administrative Assistant," *High Points*, 39:23-25, October 1957.

The author describes a day's activity of an administrative assistant in a Brooklyn senior high school. The narrative gives insight into specific activities in a school situation where duties are somewhat generalized.

JARRETT, RICHARD W., "The Activities of the Assistant Principal in Secondary Schools," *NASSP Bulletin*, 42:28-32, September 1958.

The author sought to determine function and status, duties and responsibilities of assistant principals in large metropolitan areas. Those contacted by questionnaire were: (1) 116 Los Angeles vice-principals, (2) assistant principals in 23 large cities, and (3) ten specialists in school administration.

Six major areas of responsibility listed in order of time allotment are: administration of the educational program, pupil personnel services, administration of co-curricular activities, school management, community relations, and professional and in-service training. From the findings, the author recommends:

1. The title designation should be standardized as assistant principal.
2. Academic requirements should be the same as for the principalship.
3. The position should be a proper internship for the principalship.
4. An official statement should be adopted by the school system indicating duties and responsibilities of assistant principals.
5. In-service training for new assistants should be conducted by the superintendent and/or his staff.
6. The principal should have a free hand in assigning specific duties.
7. There should be a minimum of two assistants when enrollments reach 1100, and three assistants for enrollments of 2100; additional assistants should be provided when special problems increase the administrative load —double shifts, extended day, *etc.*
8. Assistants should be employed for 11 months.
9. The following major areas should be delegated to assistants individually: curriculum and instruction, student activities, student services, and school management.

LAUGHERY, WAYNE W., "Expedience or Vision in the Assignment of Assistant Principal's Duties," *NASSP Bulletin*, 43:112-14, September 1959.

A junior high-school vice-principal in California thinks that the position of assistant has evolved in haphazard fashion, without sufficient sense of direction or underlying philosophy. Assignment of duties is usually done by the principal, with little direction from the superintendent or board of education. This position should serve two major purposes: (1) more effective administration of the school program, and (2) in-service training experience for the principalship. In-service training should include the following areas of experience: pupil personnel services, professional and non-professional personnel services, curriculum, plant management, community relations, and general educational leadership.

LONG, CHARLES M., "Duties of Secondary School Vice Principals," *NASSP Bulletin*, 41:26-37, February 1957.

This is a study concerning status and duties of vice principals in New York State. Information is summarized from 355 replies to a questionnaire containing 152 items. Major findings are:

1. Vice principal is the title most commonly used.
2. Approximately 70% are supervisory officers; *i.e.*, teach no classes, or devote a major portion of time to administrative duties.
3. Term of employment is usually 10 months.
4. Approximately 85% are married men: 15% are single women.
5. Approximately 84% have a master's degree.
6. Many are young enough to advance to higher administrative positions.
7. Supervising vice principals carry primary responsibilities in many areas of school administration.
8. The vice principalship is an active position which affords experience and training for a higher educational post.
9. The position of the teaching vice principal is nominal, and offers little training for the principalship.
10. The prevalent primary responsibility of the teaching vice principal is to act in the absence of the principal.

Recommendations include: (1) teaching vice principals should be relieved of classroom duties to provide time for proper functioning in administrative and supervisory responsibilities; (2) outstanding personnel should be employed as vice principals in view of the importance of the position.

MARTIN, EVELYN B., "A Profile of Women as Secondary School Vice Principals," *NASSP Bulletin*, 42:77-83, March 1958.

The author describes a study of the status and function of 80 women vice principals located in various parts of the United States. The purpose was to determine by a survey of the literature and by questionnaire: (1) views which subjects have as to scope of the position, (2) duties and responsibilities, (3) pattern of promotion, and (4) ambitions and stated goals of subjects. Major findings concerning women vice principals are:

1. There is a lag in opportunities for advancement in educational administration as compared to many other fields of endeavor.
2. They tend to be single and advanced in years.
3. Long years of teaching experience precedes the appointment of women to this administrative post.
4. They evidence concern for professional preparation and growth.
5. Responsibilities center around a narrow range of functions—discipline, supervision, scheduling, guidance, and concerns of girls.
6. In general, they do not aspire to the principalship.
7. A high degree of job satisfaction exists.
8. Possible threats to morale include serious discipline problems, heavy assignments, undue clerical work, undesirable areas of responsibility, limited classroom contacts, and strained relations with other administrators.

PFEFFER, EDWARD I., "Duties of Vice Principals in New Jersey," *NASSP Bulletin*, 39:57-67, May 1955.

This article summarizes findings related to duties as reported by 143 supervising vice principals in New Jersey. From a checklist of 281 specific duties, respondents were to indicate which duties they performed, amount of responsibility in connection with each duty, and frequency of performance.

Secondary-school vice principals have *major* responsibility for six duties relating mainly to pupil personnel. They share *equal* responsibility for a number of duties of a supervisory and administrative nature; they have *limited* respon-

sibility for public relations activities, special services, and duties of a clerical nature. Duties which vice principals considered most important embraced these major areas: supervision, pupil personnel duties, public relations, and those of organization and administration.

SEYFERT, WARREN C., "Please Ask Mr. Smith To Come In," Editorial. *School Review*, 62:70-71, February 1954.

This editorial calls for upgrading of the position of high-school assistant principal. One possibility is to reduce the range of activities, and increase the degree of responsibility in stated areas. Educational programs for training school administrators should: (1) recognize the assistant principalship as a specific vocational goal, and (2) give better training to principals in how to delegate responsibilities to competent assistants.

TIMES EDUCATIONAL SUPPLEMENT, "Continuity Man: the Second Master's Role," (a Correspondent) *Times Educational Supplement*, 2371: 573, October 28, 1960.

The position of Second Master in England rather closely parallels that of the assistant principal in the United States. The post is more than that of a deputy; it is a position in its own right and has been recognized recently in the salary scale. Although duties are indeterminant from school to school, those which follow are somewhat typical.

Specific duties are: act in absence of headmaster; arrange for substitute teachers; arrange for internal and external examinations; arrange speech days, founders day, and parents' evenings; handle school discipline; assist with orientation of new staff members.

General functions are: serve as an intermediary between the headmaster and the staff; communicate and interprets in both directions, hoping to retain the confidence of both; serve as a safety valve through whom both headmaster and staff may relieve pent-up feelings; listen to complaints with patience and discretion.

VAN EMAN, CHARLES R., "The Functions of the Assistant High School Principal and Other Assistant Executives," *Educational Research Bulletin*, 5:148-50, March 31, 1926.

This is one of the earliest published studies concerning the function of the secondary-school assistant principal. For some years following its publication, the study was cited as a prime authority on the question in textbooks on school administration. Findings are based on questionnaire returns from 52 principals in large junior and senior high schools of Ohio.

The 14 listed duties were concerned chiefly with supervision of extra-curricular activities and tasks of a clerical nature. The author found the following numerical provisions in the 52 responding schools:

Number of Assistants	*Number of Schools*		*Enrollment Range*
	High	*Junior High*	
3	5	1	1705-3000
2	6	1	1167-2637
1	8	13	512-2150
0	7	11	(not given)

WAHLQUIST, G. L., "Vice Principals: Are They Out-of-Date?" *Clearing House*, 28:78-79, October 1953.

Guidance counselors have assumed some of the traditional functions of the vice principal. Contrary to most theoretical statements on guidance, the El Monte (California) School District decided to have all student referrals go directly to a counselor. Under this philosophy, discipline problems would be solved on an adjustment basis rather than on a citizenship basis. The author thinks that desirable results have been achieved through this approach.

The concept of the vice principal as that of a disciplinarian, whose main tools were "bawling outs," threats, and suspensions, is an outmoded feature in the modern high school. Since the function has changed to a broader scope of activity, the outworn title should be changed to that of "assistant principal."

WEISS, GEORGE A. W., "The Duties of the Secondary School Vice Principal," *NASSP Bulletin*, 37:109-17, December 1953.

A study which summarizes the duties of 66 vice principals located in the Middle Atlantic area. Three duties were performed regularly by more than 50% of the respondents: (1) running the school in the absence of the principal, (2) representing the school at functions in lieu of the principal, and (3) parental conferences regarding pupil discipline. Shared duties performed regularly by more than 50% of those replying embraced broad areas of school administration and control. Respondents indicated a work week of approximately 52 hours. Activities consuming the greatest amount of time were:

1. Pupil welfare, and related conferences with parents, students, and teachers, 20.7%
2. Routine office and clerical tasks, 14.3%
3. Variable duties, many not recurring, 12.9%
4. Supervision and class visitation, 12%
5. Professional and community relations, 10.8%

Trends since 1939 (Wright): (1) greater amount of time devoted to administration and management; (2) pupil welfare continues to play a major role in the responsibilities of the vice principal; (3) the 52-hour work week represents a substantial increase since the inception of the position.

WELLER, GERALD M., "The Role of the Boys' Vice Principal," *Educational Administration and Supervision*, 24:705-08, December 1938.

The author notes the scarcity in 1938 of literature on the role and duties of vice principals. He discusses the functions of vice principals under six headings: pupil control, pupil activity direction, instructional supervision, plant management, community relations, and miscellaneous administrative duties.

WRIGHT, W. A. E., "Educational and Vocational Histories of Vice or Assistant Principals in Senior High Schools," *School and Society*, 49:553-56, April 29, 1939.

The author used the vocational history technique in securing information from 194 assistant principals located in cities of 20,000 population and above. Approximately 78% of those replying were men, and 22% were women; of those replying, 48.5% were designated as assistant principals, and 45.4% as vice principals. The schools involved had a median enrollment of 1,903 students.

Academic Status and Training—Those holding the various degrees were: bachelors degree, 30.3%; masters degree, 66%; doctors degree, 2.1%; no degree, 1.6%. Median ages at time of attaining degrees were: bachelors degree, 26.6 years; masters degree, 33 years; doctors degree, 41 years. Irrespective of degrees held, the median assistant principal had completed 5.9 years of college work. With respect to professional activities, 29.9% were members of a state or national committee, and 13.4% were holding office in a state or national organization; 6.7% had published one or more books or monographs, and 18.6% had published one or more magazine articles.

Experience, Economic Status, and Vocational Progress—Approximately 87% of the respondents began their educational careers as elementary- or secondary-school teachers. Approximately 2/3 of them were teaching in high school at time of promotion to position of assistant principal. They entered the teaching profession at the median age of 22.8 years, and became assistant principals at the median age of 37.2 years. The men became assistants after a median of 13.9 years of experience, while the women became assistants after a median of 15.3 years of teaching. The median initial salary was $2,808, and the median salary at the time of this study was $3,267.

Duties—The percentage of assistant principals wholly or partly responsible for certain duties were: conferences with pupils, 100; conferences with parents, 94.3; behavior problems, 93.3; assisting pupils with individual programs, 75.3; students registration, 74.2; absence, 73.2; educational guidance, 71.6; assisting in curriculum revision, 67; making master schedule, 61.9; classroom observation, 53.6; vocational guidance, 51.5. Approximately 60% of the respondents teach no classes.

As of 1939, it is likely that individuals aspiring to the position of assistant principal will follow the same route of advancement as was indicated by the subjects of this study.

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Students Evaluate Their Teachers

ROY C. BRYAN

THE Student Reaction Center at Western Michigan University prepares student-reaction reports for secondary-school teachers upon request. These reports consist of averages of student responses to a series of scaled questions and summaries of students' comments made in response to questions asking them to name one or two things they "especially like about this class or teacher" and one or two things they "especially dislike." The Center has copies of hundreds of these reports in file.

Recently the writer examined one hundred of these reports for the purpose of getting answers to two questions: How do students describe the top four teachers out of the first one hundred cases examined? What are some of the teacher behaviors disliked by students? This article is a report on the answers to these two questions.

Student Comments About the Four Best Teachers

Following are remarks made about the four teachers who received the highest averages in a group of one hundred. The statements by different students are quoted verbatim. In the opinion of their students, these four teachers are ideal. (Each statement represents a different student.)

Teacher A: Keeps class (mathematics) lively and interesting. Covers all phases of the subject. . . . I like this class because I feel as if I'm learning something. . . . He has helped me personally and I think if it weren't for him I wouldn't be getting math very well at all. . . . You are always learning something new and interesting. . . . I am learning very well in this class. . . . I always learn something when I come to this class. . . . He readily admits it when he is wrong. . . . He has a knack of mixing a little humor with his work. . . . He makes us work hard and that is the best way. . . . He is always around

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when needed and stands for no foolishness in class. . . . He has a very good sense of humor. . . . I think this class is the most interesting of all my classes. . . . He doesn't let the work bog down. . . . The class is interesting, the period passes fast, and a large amount of material is covered and sufficiently learned. . . . He doesn't give too little work but he doesn't overdo it either. . . . Extraordinary ability to make things plain and easy to understand. . . . Has given me a liking in math, and I have decided to continue my training in it. . . . I think I learn more in here than any other class and still have fun. . . . I like the way he gives his examples. . . . He is always willing to help during a period he has free. . . . This teacher makes sure you know what he is talking about. . . . Best teacher I have. . . .

Teacher B: She (English teacher) tries to understand your problems and treats us as adults. . . . She will help individual students. . . . She treats us like adults. . . . Her teaching methods are excellent and her friendliness is encouraging. . . . She is very intelligent. . . . She demands attention in class and knows what she is talking about. . . . She covers a lot of material in class and her ability to make her students learn is excellent. . . . She has good organization. . . . She is always well prepared, presents a variety of material in a number of ways, encourages us to think for ourselves, and she knows her work. . . . In covering a wide area of study, she can summarize and hit the high points in an effective way to let us see clearly what is to be learned. . . . She tries to help everyone who needs help. . . . I like the class because it helps you find self-confidence. . . . She is patient with me and others and is a good friend. . . . This class has helped me a great deal. . . . She is understanding and seems to like teenagers. . . . She is fair and keeps the class under control without being harsh. . . .

Teacher C: Has a thorough knowledge of the subject (chemistry). . . . He explains very clearly. . . . He is willing to help you. . . . He has a great deal of knowledge of chemistry. . . . He is efficient, well versed. . . . Very considerate. . . . He's fair. . . . His explanations are very good and easy to understand. . . . Class is never boring. . . . Class is always interesting. . . . He's fair and friendly. . . . Knows a lot. . . . Keeps very good order. . . . He gives everybody a fair chance. . . . His presentation is clear and the class is interesting. . . .

Teacher D: She makes the class (Unified Studies, junior high school) interesting and we learn a lot. . . . She makes many uninteresting topics interesting. . . . She has a different way of expressing new ideas. . . . The things our teacher teaches us are good, but the way she teaches them is excellent. . . . She knows a lot about what we are talking about. . . . She keeps the class under control without getting mean or raising her voice. . . . She gets things done and keeps the class under control. . . . She understands what she is teaching and, if a question is asked and she does not know the answer, she admits it and tries to find the answer. . . . Has a good sense of humor. . . . She is understanding about problems. . . . She can teach things so that you will remember them. . . . She makes a class interesting. . . .

No teacher gets this kind of response from all students. Seldom does a teacher fail to get a favorable response from at least a few. Most students, parents, and educators will agree that the teacher who can get this kind of response from ninety per cent of his students is a better teacher than the one who favorably impresses only ten per cent.

Things Students Dislike About Some Teachers

Following are comments quoted verbatim, about selected teachers who have ways of behaving that students do not like.

Teacher E does not always get down to their level: He goes too fast in the explanation of difficult problems. . . . Because of the teacher's knowledge, it is hard for him to understand why the poorer students cannot get it. . . . I believe he should be teaching in college or more difficult course, for it is hard for him to imagine how difficult it is for us when he knows it almost to perfection. . . . He goes quite fast. . . . If you don't get it the first time, you don't get it at all. . . . He teaches us as if he were talking to a higher caliber student who can catch on very quickly but if you don't you are sunk. His tests are a bit too long for the class period. . . . He does not go into very much detail when explaining how to do a certain problem but leaves a lot for the student to get on his own. This is good up to a certain point, for it makes a student think for himself, but I think it is a little bit overdone. . . . He makes the tests too long for the time allowed. . . .

Teacher F does not get up to their level: Tests are too easy sometimes. . . . People get away with things that they shouldn't get away with. . . . He could be more strict on homework assignments. . . . He doesn't assign enough homework. . . . He should be stricter with us. . . . I could learn more if we all didn't fool around so much. . . . He gives easy tests. . . .

Teacher G has questionable mastery of subject: He doesn't seem to know much more than we do about the subject. . . . Maybe he doesn't know enough about the subject to explain it clearly. . . . He doesn't always get the point across right away and has to ramble on and on and this gets boring. . . . He gets confused sometimes. . . . He knows his subject, but does not put it across very well. . . . He doesn't seem to have much of a background in English. . . . I don't think he is educated enough to teach this subject. . . . Some of the things he teaches us do us no good. . . .

Teacher H knows the subject but can't communicate well: His explanations take up a lot of time and still do not clear up the issues. . . . He sometimes is confusing in his explanations. . . . He knows his subject but is very poor at explanations. . . . He is unable to transfer his knowledge to us. There is too much time wasted. . . . He is a brilliant man, but can't get his knowledge over to the students. . . . He has an excellent knowledge of what he is teaching but doesn't know how to explain it clearly to us. . . . His explanations are long, boring, and confusing. . . . He doesn't put a point across as well as he could. . . .

Teacher I has too many pets: He seems to favor girls. . . . He seems to have pets. . . . He is apt to favor one person above another. . . . Sometimes he gives more attention to the better students instead of those who need the attention. . . . There are too many pets in this class. . . . He definitely plays favorites, I think. . . . I don't think he treats us all the same. . . . He favors the good students to an extent. . . . We all don't get the same opportunities. . . . He pays attention to some people too much. . . . He seems a bit unfair to some students and shows partiality to others. . . .

Teacher J uses a marking plan that does not seem right: I think the marking system is unfair. . . . I don't like his grading system. . . . I don't like his marking plan. . . . I don't like his method of calling on people to recite. . . .

I don't like his marking system. Some kids get called on more than others. . . . I don't like the method he uses in choosing kids to recite when he picks names out of a hat. . . . He is an unfair marker. . . . I dislike our teacher placing so much emphasis on the marking system. . . . I don't think he marks very fair. . . . His marking system is not accurate enough. . . . I dislike the marking system because it is a gamble for either a high or low grade. . . . The marking system doesn't seem balanced right. . . .

Teacher K is not strict enough in discipline: I am ashamed of the way our class acts toward this teacher. Most of the students say they like him yet they pay very little attention in class. . . . He has no control over us. . . . I dislike this class in the manner that he lets us get away with too much. . . . Sometimes he waits too long for the class to be quiet. He lets them keep talking. Some of them run around out in the halls and he doesn't do anything. . . . He is not as strict as he should be. If he were more strict we would learn more. . . . The students are very noisy and always talking. . . . If he would have started out with a more strict attitude, then the class would not have gotten so out of hand. . . .

Teacher L has a quick temper: Too harsh . . . Loses her temper easily. She's too grouchy. . . . She's too stern. . . . She's too rough. . . . Could be more understanding. . . . Doesn't even try to understand. . . . Very strict and mean. . . . Crabby. . . . Too impatient. . . . Gets mad before she gets any of the facts. . . . Gets mad very easily. . . .

Teacher M shouts too much: Shouts too much and does not maintain discipline well. . . . It's a hard class to control, noisy and disrespectful. . . . He lets the noise get to a maximum before telling us to be quiet; and, when he does, he shouts at us to be quiet. . . . Sometimes he yells too loud. . . . When the teacher tells us to be quiet, I think he should be quiet and not yell at the top of his voice. . . . He's always shouting. He shouts and shows favoritism toward some students and dislikes others. . . . We are forever getting lectures on respect. . . .

Teacher N uses the same procedures over and over again: His classes aren't too interesting. . . . He keeps doing the same thing in each chapter. . . . Should have a little more variety in his classes. . . . We do the same thing day after day. . . . Too boring. . . .

Teacher O is moody: He is moody and is changeable from happy to sour. . . . He has certain moods. . . . When he is in a bad mood, he takes it out on us and piles the work on and expects it at the end of the class hour. . . . He is awful moody. . . . He takes his moods out on his pupils. . . . He is a little moody. . . . Sometimes he has bad moods and sometimes he has good moods. . . . His moods can change so quick and he is a different person and you are in his way. . . .

Teacher P embarrasses students: He embarrasses some pupils in front of the class. . . . Sometimes he is insulting. . . . Sometimes he teases us. . . . He embarrasses people that do a little thing wrong. . . . Some of his remarks seem sarcastic. . . . Sometimes he has a tendency to act somewhat immature. . . . At times he seems rude. . . . He makes fun of some students. . . . I dislike the way he treats some of the students that are not smart in his class. . . . He shows off at times and thinks he knows everything. . . . He is a little free when insulting students. . . . He is very embarrassing at times and always has a wise answer. . . .

These are examples of "dislikes" that appear from time to time. In addition, students were unfavorably impressed by at least one teacher among the one hundred for one of these reasons: (1) lack of enthusiasm, (2) use of poor English, (3) monotonous voice, (4) sing-songy voice, (5) weak voice, (6) inadequate care to prevent cheating on examinations, (7) refusal to admit frankly lack of information on a question or to grant that a mistake has been made, (8) too many personal references to members of his own family, (9) poor dress, (10) inappropriate dress, (11) too much delay in marking and returning papers, (12) failure to spend adequate time in preparation for class, (13) treating students like children rather than adults, (14) complaining to students about low salary, (15) out of the room too much, and (16) excessive prying into students' personal affairs.

How Does a Young Principal Improve the Reading Program in a Small School?

MARSHALL G. BATHO
MRS. JANE REGAN

IT IS estimated that from ten to twenty-five per cent of our school population consists of children who are of normal or superior intelligence, but whose reading abilities are below average for their age and who have the capacity for better performance. Many of these students can be helped by instruction in remedial reading. A dramatic case of successful instruction was reported by Dr. William Eller of the University of Iowa. This story involves a boy who came to the University for help when he was sixteen and had dropped out of the ninth grade. In the first diagnosis, he appeared to be able to read eight words. After two years in the clinic, he had made about eight years' of growth in reading skill; enough so that when he took the CAA test for a private pilot's license, he did not err on a single question. This young man was unusually motivated because his mother had promised that, when he learned to read, she would buy him his own airplane.

When the young principal in a small high school becomes concerned about improved reading instruction, he must first of all talk the problem over with his staff. Then he must cooperatively study the needs of the students. How many pupils in his school are retarded in reading two or more years in relationship to their capacity? There are three simple

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methods that can be used to identify problem readers. The first is to compare the reading level with the latest achievement test score using the following formula: years in school, times I.Q., divided by 100, plus one. If Johnny has an I.Q. of 120 and is about to enter ninth grade—8 times 120 divided by 100 equals 9.6 plus 1, equals 10.6. He has a reading expectancy of almost eleventh grade. If his reading scores are less than eighth grade, he is a likely prospect for special help.

Another way to determine reading level is to read selections from a graded series to see how well the pupil is able to comprehend what is stated directly, and how well he can draw inferences from the materials. Here again, the level reached is compared with actual achievement in reading as determined by a standard test or informal reading inventories.

A third way to determine the reading level of the student is to spend a few minutes with him in oral reading sessions. This will quickly reveal many serious deficiencies.

The next step is to determine what aspect of reading skill seems to need the most improvement in the principal's district. He must have proof of these deficiencies from reliable tests. These skill deficiencies may include the following: perceptional, emotional, intellectual, word recognition, word attack, flexibility of rate, comprehension, and vocabulary development.

In the light of what has been discovered about the reading problems in his particular school, the young principal informs the superintendent and justifies the expenditure of funds for: (1) special teachers, (2) released time for personnel; (3) tests, lists of tests, and professional books on reading; and (4) materials of instruction.

What is he going to tell his superintendent?

The ability to read well is very important to boys and girls of all ages. Without this ability, they feel inferior, ashamed, and want to leave school. They are unable to read with understanding the books that are the tools with which they have to work.

He can tell the superintendent that a reading program throughout the school will result in improved student performance in all school subjects. The community will be getting more value for its teacher dollar. There will be fewer failures and a reduction in discipline problems. Slower students following printed directions will be helped in meeting every day needs such as newspaper reading and recreational as well as vocational reading. There will be fewer drop-outs. Students will also improve in reading skills such as comprehension, increased speed, vocabulary, and study skills. The result? Graduates will go on to college "knowing how to study."

Having gained the consent of the superintendent to proceed, the young principal may want to employ a reading teacher to coordinate the work and assist other teachers from first grade through twelfth. Special reading classes can be divided into three groups. (1) The remedial reading classes should be offered for seriously retarded readers. Because of the

seriousness of the reading difficulties, classes should not exceed five to eight students. They should meet two to five times per week. (2) The developmental reading classes should be offered for those who have reading problems in special areas. These classes should be limited to fifteen to twenty students meeting five days a week. Often these students will show more progress than the remedial students. For example, last year at Evergreen Park Community High School 45 students were enrolled in the developmental and remedial classes. Twenty-eight of these students were in developmental reading classes. After one semester of work, nineteen had improved their reading levels by one year or more. Fourteen of the students were in remedial reading classes; after one semester of work, eight of these fourteen showed definite improvement in their reading scores. (3) Corrective reading classes should be offered on a voluntary basis for the average or above average student. Many gifted students who are reading above their grade level can still improve considerably. It is important to remember that a student who is reading a year or two above grade level and who has received good grades in secondary school may be in difficulty in college if his reading skill is not at its highest possible level.

There are things that a young principal should not do. He must not come home from a convention, or appear before the staff at the opening of the school year, suddenly announcing that reading difficulties will now become the major in-service topic for study. There is no surer way of making himself unpopular with his staff and of failing to accomplish his objective. He must work and think with his teachers as partners.

Second, this program for the improvement of reading should not be a "crash program"—a flower box type of program—a quick bloom-and-show program. Rather, it should be a continuous, cooperative, systematic program involving the staff, the school board, and the community.

Third, a young principal should not try to transplant some other school system's program into his school. The needs of his students may be entirely different from those of the other community.

Fourth, he should not bring in a high-salaried consultant or a reading teacher at once. Rather, he should study his staff. It may be that someone on his staff is interested and has the training or is willing to acquire the training.

Fifth, he should not assume that all the reading needs of his students are remedial. Too frequently, the reading program stops with the remedial students. There may be developmental and corrective reading needs as well.

Finally, and most important, he must not forget to set up evaluation procedures as he and his staff cooperatively develop the reading program.

Remedial reading instruction should be started through the use of materials at the students' level. Wherever possible, the interest of the students should be used in selecting materials. The materials should be interesting; they must emphasize the skills that need to be improved.

The purpose for remedial reading should be clear to the student and the nature of his disability should be known to him. The student should be kept aware of his progress. Also, a variety of teaching techniques must be employed. In summary, the steps in developing a reading program should include the following:

1. Through the use of reading tests, ascertain the number of students needing special reading instruction.
2. Obtain superintendent and board approval for personnel time and purchase of materials.
3. Employ a reading teacher, or use a staff member who has had some training in remedial and developmental reading techniques.
4. Determine the length of time that special reading is to be taught, and the number of periods per week these classes will meet.
5. Secure the needed materials and equipment to begin the reading program.
6. Decide the maximum class size for both remedial and developmental reading classes.
7. Involve the entire staff in planning the program.
8. Set up evaluative techniques from the beginning.

Product or Process?

WILLIAM S. STERNER

A PERENNIAL problem which seems to be much accentuated today is defined briefly by the title of this article, product or process? We seem to be making decisions in the schools and colleges as if we really have a choice between the two—product or process. The undesirable implications of this assumed dichotomy appear to be around us everywhere in the classroom, and outside too.

The present emphasis on getting into college appears to overlook basic reasons why people should go to college. Is the college degree important only because it opens doors to professional or business opportunities, enables one to find the "proper" life mate, or helps one gain social prestige? To be sure, some programs are oriented to specific vocational goals. But most colleges, especially liberal arts colleges, are committed to the development of intellectual curiosity, competence, and integrity. A college student should develop, as one institution says, "a genuine enthusiasm for learning, accuracy in dealing with facts and interpretation of those facts, and an incorruptible respect for truth." In college, too, there are cultural

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opportunities to be enjoyed, great minds to be encountered, and values to be developed in the process of obtaining the coveted degree.

In some high schools there seems to be so much stress on pupils achieving high marks on tests, on the number and amount of scholarships awarded, on competing academically with someone else. Have we lost sight of moral and ethical standards that made our country great? Do students ever study anything today for the joy of learning the material, for the fun of solving problems, for the satisfaction of doing the best job possible? Have we forgotten the value of *ars gratia artis*? Some things are worth while just for the doing. If done well, marks and other rewards will be forthcoming. If not done well, the process, itself, may have been beneficial therapy. We should be interested in more than merely having pupils recall or remember terminology, facts, conventions, or methodology. Students should be able to use their knowledge, to apply information to new situations and problems. They should be able to interpret facts, to apply ideas to concrete situations, to analyze relationships, to develop a plan of action, and to evaluate materials and methods used. Too many people seem to be concerned only with regurgitating facts; too few in employing them at higher levels. Even the outcome should be defined, at least partly, in terms of process.

There seems to be so much concern about being in the "right" group, especially if all one's friends are in that group. Why do we worry so much about labels, high marks, and honor rolls? When a pupil has difficulty reading (even in the high-school or college level), let us not just be satisfied if he passes; but, let us try to improve the basic skill needed to pass with greater ease. When a student's potential is not realized because of poor study habits, the teacher should help the pupil with special techniques of learning the particular subject. When we educate the masses, we should not lose sight of the individual learner. Just marking students down instead of diagnosing their difficulties and without providing remedial instruction can hardly be called teaching. Principals should not allow this process. A professional teacher will do more than just keep school, make assignments, and test pupils on how well they learn the subject outside of school.

In some classes, we are so concerned about the knowledge to be gained that students are forced to cram facts the night before the examination. High scores become more important than basic understanding. Formal recitations are tolerated by superiors so that the teacher may quiz the pupils on the lesson of the day. Why are other techniques so little used in the learning process?

In athletics, there seems to be too great an emphasis on winning the game almost at any cost! Too often, competitors try to outsmart the officials and each other. Athletic skills include the "right" way to maim or injure one's opponent if one can get away with it! Have we forgotten the ideals expressed in sportsmanship codes? Do we no longer play games for the fun of participating? For the physical and emotional well-

being of the player? Must we destroy enjoyment because even amateur sport is too often big business, primarily a way to advertise the school and the town?

In some schools there is quite a tradition of pupils just joining activities. These pupils feel that they need not attend meetings of clubs nor take part in the organization's program. However, they look forward to receiving the pin or certificate, and getting their picture in the yearbook. Busy college admissions officers are sometimes impressed by a long list of activities in which an applicant has "participated." Since few school officials record any evaluation of the student's work in the activity, no one seems wise to the true situation. On the other hand, there are many values that pupils can get out of thoughtful and energetic participation in student organizations. He can explore his interests, make valuable social contacts, apply knowledge, learn leadership techniques, enjoy fellowship, develop some independence, become better acquainted with faculty members, *etc.* However, these outcomes result from the process. Much of the value depends on the way in which the group is conducted.

In student elections, sometimes we allow candidates to copy party politics at its worst, to use the shoddy tricks of the huckster, and to drag red herrings across the campaign trail. There are cases where the administration or faculty has too tightly controlled who is nominated, how the campaign is run, and what issues are allowed to be raised. "Democratic" elections have been rigged in order to insure election of pawns of the faculty who find it "easier" to control the situation that way. Ease of administration overshadows the learning process. There are, to be sure, many instances where student officers win with honor and demonstrate responsible leadership. We must encourage nominees in playing up their qualifications for the office rather than simply running a popularity contest. In the end, the democratic spirit is far more important than the mechanics of government. Elections are not unique to democracies but the idealistic way of conducting them in a democracy is typical of our form of government. Regulations concerning nominees should not be overly restrictive; most pupils should be eligible to run. Adults should not screen nominees for office. The students should select their own representatives. The electorate must learn to choose wisely from among all who run. The elected officials should be chosen by a truly democratic election process.

Maybe we have put too much emphasis on elaborate projects for science fairs, on dramatic shows that must rival Broadway, and on going to a prestige college. We have too often focused attention only on the product. Maybe we are stressing the symbols of success while forgetting the reasons why they were created in the first place. The educational product is only as valuable as the educative process experienced by the learner in attaining the goal. He should be a better person because of the school program he has experienced. The book, device, contact, or machine must do something worth while educationally to the learner. Improved be-

havior should result. If the process has not helped him achieve the wholesome objectives of the school, it matters little how many awards are given him in the form of marks, diplomas, letters, or other recognition. Let us not help him gain the "whole world" but lose his own soul on the way. Both process and product are important! We must give appropriate attention to both.

They Must Be Seen To Be Appreciated

GEORGE K. DRAKE

A Review of a Workable Plan for Supervision of Instruction

THE time to observe, the desire to appraise, the courage to evaluate are the three keys to staff improvement. There is not a principal in any school who does not wish to maintain and constantly raise the quality of instruction among the members of his teaching staff.

Reported by the earliest writers in educational literature as one of the functions of the principal, supervision of instruction is still one of the most important and most neglected duties of modern school administrators. Even in this age of specialists, call them what you wish—coordinators, facilitators, directors, or supervisors—the duties must remain the same: to improve instruction, to assist in making what takes place in the classroom increasingly more important and meaningful to students. With the increasing emphasis on college and academic work, the efforts of all administrators must be directed to this objective.

In spite of all good intentions, most principals find that supervision of instruction is the easiest duty to neglect. One cannot neglect the mail or the line of teachers, pupils, and parents who arrive at the office door. So, when the time is short, we frequently neglect the one opportunity which keeps us in touch with the primary reason for our entering the field of education—the working with students in the instructional program. The modern secondary-school principal more than ever before needs to keep abreast of curriculum trends, he needs to stay close to his pupils if he is to understand their hopes, their aspirations, their ambitions, and their modern version of the English language. Unless he establishes some definite plan to keep in touch, he becomes a stranger to his pupils and an unpredictable nemesis to his staff. Two of a good administrator's primary duties are the selection of good teachers and the in-service training of these outstanding instructors and retention of only the best. With all the

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pressures from the more obvious problems, how can a busy principal find time to carry out this very important function?

There appears to be two very obvious plans. First, make sure that you are utilizing all the help which is available. Make use of each of your administrators—vice principals, deans, guidance and curriculum directors —as well as your department chairmen who, because of their knowledge of pace and subject matter, are your most valuable assistants. In the use of fellow administrators, divide assignments according to the training and experience background of the staff. In order to see to it that their duties do not relegate this responsibility to those hours (which never seem to occur) when there is nothing else to do, each administrator, including the principal, should report at the weekly staff meeting all supervisory visits.

Second, to provide that you, as the principal, get out of your office and into the classrooms, place your supervisory visits on the calendar like any other appointment and then have your secretary see to it that you keep the schedule. It may be necessary to block these calls several weeks in advance to protect the time from other infringements.

Where you are using several different members of your administrative team in making observations, it is important to standardize the reporting forms and procedures. The following are suggested as items for your observation sheet:

1. Evidence of planning and organization
2. Qualities of classroom leadership
3. Personal characteristics
4. Teaching techniques
5. Physical arrangement of the room

One of the chief values of your visit is in reporting your observations to the teacher involved. As soon as possible (no later than 24 hours after your visit), a copy of the observation report should be in the hands of the teacher with an invitation to come to discuss your comments if an interview is desired. A second copy of the report should be filed in the personnel folder of the teacher for future reference in evaluating the work for retention or release. The question is frequently asked, "How often should you observe the work of probationary teachers?" There is no specific number since each case is determined by the individual needs. Some young teachers need more help than others. Those whom you anticipate may not be re-hired should be observed frequently (once each month) so that your decisions may be made on as objective a basis as possible. Every teacher has some good and some poor days, some good and some weak lessons. Make sure you have seen enough of the teacher's work to make a fair analysis of the ability of the instructor.

Frequently the question is asked, "How much of the principal's time should be devoted to supervision?" A rule-of-thumb would place this figure at approximately one fourth. Full periods of observation should be made when possible. There may be times when less than the full class hour can be made available. When this is the case, one should plan on

seeing either the beginning or the ending of the lesson and at least one transition during one's stay.

The capable, well-prepared teacher is eager to have you observe her work. Although strong teachers need less help in their work, they deserve the recognition which you can give them by making regular visits to their rooms. When the staff is composed of a limited number of probationary teachers, the time then becomes available to make observation visits in the classrooms of your permanent staff. They, too, need your advice, your help, and your recognition.

If you have taken the time to observe, if you have developed the knowledge to appraise what you see, and if you have the courage to evaluate, you will have kept yourself informed and the professional level of your staff will be raised. Yes, it is true—they must be seen to be appreciated!

Too Much "Pedagogy" in Teacher Education?

LLOYD S. STANDLEE
W. JAMES POPHAM

ONE of today's most prominent educational issues concerns the preparation of public school teachers. In newspapers and popular magazines teacher education is being hurled back and forth from critic to defender. Perhaps the most frequent point of contention is whether today's teachers are being adequately prepared in the subjects they teach—science, mathematics, history, *etc.*

The critics claim that an over-emphasis on "pedagogy" (professional education courses) in teachers colleges leads to a paucity of subject matter preparation. This weakness in subject matter preparation leads, in turn, to diluted course offerings in the public schools. In short, the public school teacher is being taught how to teach to the exclusion of mastering the subject to be taught.

The defenders claim that academic competency is necessary, but not sufficient. The public school teacher must have, in addition to academic competency, the skills that are taught in the professional education courses. Failure to provide this professional training might produce deleterious effects upon pupils.

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Little of what is being said for or against the preparation of teachers, however, seems to be based upon solid research evidence. One sees, rather, attacks upon straw men, the use of emotionally toned words, partial truths, *etc.*, all of which are tools of the propagandist.

One facet of a research study[1] recently conducted by the present authors is relevant to the present furor over the preparation of public school teachers. As part of the study an analysis was made of the college preparation and of the professional performance of 880[2] Indiana public school teachers.

Indices of academic (subject matter) preparation and of professional (teaching methods, theory, *etc.*) preparation were analyzed statistically in terms of their relationship to two indices of professional performance. The indices of academic and professional preparation were (1) credit hours and (2) grade credit points in the teachers' academic and professional courses. The indices of professional performance were (1) principals' ratings of teachers' over-all teaching effectiveness and (2) teachers' Minnesota Teacher Attitude Inventory (MTAI) scores, an index of a teacher's likeliness to establish good rapport with pupils.

Separate statistical tests (chi square) were conducted for elementary- and secondary-school teachers. Separate analyses were also conducted for secondary-school teachers who taught in only one subject matter area and for secondary-school teachers who taught in several subject matter areas. (The importance of the latter separate analyses becomes evident when one considers that a teacher teaching several different subjects may, even though not adequately trained in any one of them, show many more college credits in his teaching areas than will an exceptionally well-prepared teacher teaching only one subject.)

Results of the analyses indicated that there were *no significant relationships* between either academic preparation of professional preparation and professional performance, as measured by principals' rating and MTAI scores. In other words, neither the quantity (credit hours) nor the quality (grade credit points) of either academic or professional preparation was predictive of graduates' teaching performance three years after graduation.

This is not to say, of course, that other researches, using better measures, will not establish a relationship between teachers' academic and/or professional preparation and their subsequent performance as teachers. For the moment, however, it might be well for us all—critics and defenders—to weigh our statements more carefully, and to consider the many variables other than formal preparation that surely influence the effectiveness of teachers.

[1] The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare, Washington, D. C.

[2] This represents the total population of 1954 bachelor's degree graduates of all Indiana colleges or universities with standard accreditation for teacher education, who were teaching in Indiana public schools during the 1956-57 academic year.

Discipline Problems: An Educational Malignancy

WALTER E. McPHIE

"BE FIRM with your students—particularly during the first few weeks of school—and there will be no discipline problems." "If you are thoroughly prepared, discipline will be no problem." Universal rules governing classroom control are difficult to find, but these two approach universality as closely as any. Moreover, they are so basic to success in classroom control that they deserve their popularity. There is a real danger, however, that some of us have failed to understand the complete meaning of the two rules. Another danger lies in the possible misconception that either or both of these rules offer a panacea for all discipline problems. The paragraphs that follow will be devoted to exploring these two dangers in particular and to the problems of classroom control in general.

Understanding the Universal Rules

Firmness

The first of these two popular guideposts insists on firmness in the teacher's interactions with the pupils. But what is meant by this word *firmness*? Does it mean unyielding rigidity? Complete domination? Snarling and growling the pupils into submission? No, probably none of these. It simply means adhering closely and consistently to certain standards. In the case of discipline, these standards consist of limits within which students must operate. Therefore, before a teacher can take a firm stand, *he must know what he is standing for—or against*. Carrying this reasoning to its logical conclusion, it becomes evident that a teacher who intends to be firm with his students must first do some careful thinking, some real intellectual searching, into the behavior he expects from his students. He must ask himself such questions as:

1. How do I expect my students to enter and depart from the classroom? Does it really make any difference?
2. When I ask the class to be "quiet," what do I *really* mean? Do I expect absolute, tomb-like silence? Do I mean a comparatively noiseless amount of talking and disturbance? Do I mean different things at different times—and, if so, when and how will my students know?
3. How should my students respond to questions or enter into discussions? Should they raise their hands and wait to be recognized? Is it all right for them just to speak out when they feel like it? Or, should they wait for me to call on them arbitrarily for responses?

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4. How about chewing gum, pencil sharpening, waste paper disposal, and a hundred other rather insignificant, but nonetheless real, items to be considered? How much control over these kinds of things should I exert?

Space will not permit the proliferation of the above list. Moreover, it would be virtually impossible to include all of the problems needing analysis since they are ever-growing and often have characteristics unique to specific teaching situations. However, discussion of the questions already listed may help to clarify the aforementioned thesis: pertinent decisions must be made *before* a teacher can make a firm stand.

The first example question involves a decision about the entry and departure of students from classrooms. While it is impossible to say what is the right way for all situations, most experienced teachers agree that a floodgate left open to torrents of noise and rough-house playing in entering the room—even though the tardy bell has not yet rung—is often difficult to control after it rings. Ringing bells rarely transform young Mr. Hydes into responsible Dr. Jekylls. On the other hand, some teachers can allow considerable freedom of action before the class commences and still maintain effective control. Rules governing how students should depart from the classroom vary with individual teachers, also. There is substantial agreement, however, that a teacher who is really in control finds his students waiting for him to dismiss them, and that the teacher who allows his class to bolt at the sound of the dismissal bell permits, at the same time, a demonstration of discourtesy and a mild form of anarchy.

A look at the other sample problems reveals no more general agreement as to solutions than was found in the first problem. One teacher may insist on absolute silence when the class is in session—and be effective only when such strict regulations are in force, while another may appear to allow comparatively more noise and still have adequate control. Some teachers may demand that their students formally raise their hands when they wish to speak, while others may operate very effectively by allowing informal responses. Some students are allowed to chew gum and are, in fact, instructed on when and how gum-chewing is proper. Other students are punished for giving any evidence of even possessing chewing-gum. Leaving one's desk to sharpen a pencil or dispose of wastepaper without first gaining the teacher's permission is dealt with severely by some instructors, while others appear to lose no control under a completely liberal policy governing such matters.

It may be disappointing that no final solutions have been given for any of these sample problems. It is obvious, however, that this is impossible; each teacher must decide what is appropriate action for his own personality and for the particular make-up of his class. He may, if he wishes to do as many successful disciplinarians have done, decide *with the students* what the limits will be. In the final analysis, however, the important thing to be remembered is that the *decisions must be made* if the teacher is to be consistent and fair in his firmness.

Part of the firmness rule indicates that ruling "firmly" is especially important during the first few weeks of the school year or at any other beginning point with new students. New teachers are particularly told this repeatedly, but most of them learn the importance of such advice the hard way. Actually, it is a matter of simple logic. The initial impression is the lasting one. It is at this point that limits should be established and the teachers' expectations clarified. Once the initial impression is made, the teacher may relax his hold on the reins until such time as he again needs to revert to the original pattern of control. Returning to more strict or firm control can be relatively easily and effectively accomplished since it is a return to the established pattern. However, as many teachers will testify, starting with loose controls and ill-defined standards makes a change to more rigid controls a rough and rocky road to travel, the duration of which often exceeds the length of the school year.

In further support of taking an early firm stand, one must consider the little recognized fact that the first test given in any school classroom is rarely given *by the teacher to the students.* Rather, from the first moment of class, it is the students who subconsciously—in most cases—start testing, experimenting in ever-widening circles in search of the teacher's limits and the security which comes from such discovery. Unless the teacher takes a firm stand when the limits are reached, the tests will continue, the experimentations will increase. Understanding this process is essential. A teacher who fully comprehends it never misinterprets the *ideal* behavior of his students during the first day or two as an indication that they are well self-disciplined and will be no trouble. He recognizes that no one begins any test by boldly making costly and unnecessary mistakes. The students will test cautiously. Thoroughly understanding this process also points clearly to the necessity for each teacher to decide on many of the limits which will apply to classroom behavior prior to the commencement of classes in the fall. With this done, he will be ready to adhere firmly to at least these limits so that his students may comfortably and securely operate within them.

Preparation

The second universal rule speaks of the necessity of being thoroughly prepared. Again, answers to some pertinent questions may further clarify the meaning of this popular rule. What is meant by thorough preparation? What does preparation have to do with discipline problems? In answer to these questions, let it be said that any teacher who is thoroughly prepared knows: (1) what he hopes to achieve during any given lesson and how this daily effort relates to the larger goals, (2) why his lesson is important, (3) how he intends to teach the lesson, and (4) what materials or aids will be needed in the process. A detailed treatment of lesson planning may be found readily elsewhere, but a few paragraphs of basic information will help to establish the relationship between preparation and behavior problems.

Knowledge of ultimate goals and the relationship of daily objectives to them are essential to both good teaching and classroom control. A teacher is a leader, a leader on whom students rely heavily for direction and inspiration. No one places confidence in a leader who makes uncertain moves, moves which appear to be somewhat disconnected from eventual goals. Nor is confidence bestowed on leaders who arbitrarily ignore ultimate goals, no matter how boldly or surely they move on the immediate scene. When a teacher does not supply proper leadership in terms of direction and goals, he invites chaos. The little boy who dejectedly asked his highly "progressive" teacher, "Do us kids *have* to do what we want to do again today?" was seeking leadership, a sense of direction. Unless the teacher thinks through a proposed daily lesson carefully and relates it in his own mind to the more distant and larger objectives, he is unprepared to impart this much needed sense of direction to his students. Unfortunately, students who are left in such an insecure and leaderless situation often seek their own goals and their own leaders. Such action frequently results in serious control problems.

In addition to proper identification of immediate and future goals, a thoroughly prepared teacher knows why the lesson is important. A young eighth-grade boy, whose father owned a garage, approached his social studies teacher one morning and asked, "Why do I need to study all this stuff that happened so long ago? I'm not going to be a historian; I'm going to be a mechanic—just like my dad." Obviously, this student could see no reason for the lessons being given. Moreover, it is highly probable that his teacher had never justified the lessons in his own mind—except, perhaps, in a very general way. Until the teacher is prepared to explain the importance of his lessons, he can hardly hope for the kind of motivated interest which holds students' attention and prevents them from seeking other things to do—things which often require disciplinary action.

The teacher who has carefully selected the goal of his lesson and who understands why the lesson is important must next pay close attention to how the goal can be achieved. Many teachers make the mistake of confusing a well-organized outline of subject matter with complete preparation. While the *what* of lesson planning is essential, the *how* is no less important! Since most new teachers are not far removed from an environment where lectures were in vogue, there is a strong tendency for them to want to lecture, also. While lecturing or telling is perfectly legitimate in some instances, it falls drastically short as an all-inclusive method of lesson presentation. Students need to be involved in class activities; they need to express themselves and do things which they recognize will lead to a clearly outlined goal. Some students can move rapidly; others move painstakingly slowly. Some kinds of learning requires seeing things or processes, handling things, and working with them. Thus, it becomes apparent that a teacher may be well prepared in terms of knowledge of subject matter and still lose his class to disinterest and noise because he has failed to seek out the best approach and the proper teaching materials.

Even though it has been stated that firmness and preparation, when properly understood, constitute extremely important guides for minimizing the threat of discipline problems, it would be erroneous to conclude that these two rules alone will eliminate such problems. It is doubtful that discipline problems will ever be *eliminated* for any teacher, no matter what is done. This is important to understand. Whenever people get together, differences in personality, ambition, temperament, *etc.*, are bound to result in occasional flare-ups. The good teacher is one who keeps such problems to a minimum and who handles them effectively when they do occur. Let us turn to ways and means by which, in addition to firmness and preparation, teachers might accomplish both of these tasks.

Keeping Discipline Problems to a Minimum

In general, methods of preventing problems of control can be divided into two categories: (a) things which should be done, and (b) things which should be avoided.

Things Which Should Be Done

1. *Use personal experience as a guide in identifying students as discipline problems.* Cumulative records are important and serve a real purpose, but reading a former teacher's report which labels (libels?) a student as a discipline problem before the new teacher has even met him tends to foster a bias which is not easily overcome. There is nothing gained by making a problem out of someone who may not be one. The student is older, and his new teacher is a different personality.

2. *Talk informally with the students at the very outset of the year about classroom procedures and expectations.* Consider these things together. Have the students suggest the kinds of behavior which is necessary if the class is to function for the benefit of all. List these suggestions on the board, feeling free to add important omissions, if any, to the list—but not before the students understand them. Emphasize the "what *we* need" rather than the "what you students are going to do." Be positive rather than negative in this approach.

3. *Permit students to sit where they choose.* This is an indication that the teacher has confidence in them. People act the way they are expected to act. Let them know that only *they*, through misbehavior, could force arbitrary seat designations.

4. *Learn the students' names immediately.* Anonymity gives a sense of security to misbehaving students. Names can be learned most easily through the use of a seating chart. Using such a device in no way runs contrary to the suggestion immediately above since students may still choose any seat they wish. They should continue to use the desk of their choice, however.

5. *Begin lessons promptly.* Just a few minutes of delay have caused many teachers much grief in regaining control of their students. Through the use of a seating chart, roll can be taken silently while the teacher

reviews the main points of the previous lesson. Beginning immediately gives no time for unwanted behavior to commence, and will noticeably reduce tardiness.

6. *Be enthusiastic.* If teaching appears to be a chore, students hardly can be expected to relish the experience. Enthusiasm is contagious—and an epidemic of this sort is to be encouraged. The teacher who really knows that his lesson is important tends to be enthusiastic, and enthused students seldom seek mischievous side activities.

7. *Provide each student with the opportunity for some measure of success.* Everyone needs attention and ego satisfaction. If the classroom is a place where a given student meets nothing but failure, he will seek success through other avenues, such as being the class clown, bully, *etc.* Any student who is intelligent enough to be admitted to public schools is intelligent enough to succeed at *something* if only his teacher will work toward that end.

8. *Admit error.* A student who has been wrongfully accused deserves an apology. This is just common courtesy. Admission of error is the mature way of doing things; bluffing is petty and will bring undesirable results. Students can spot a phony immediately.

9. *Make assignments reasonable and clear.* Nothing is more apt to foster rebellion faster than the insecurity which accompanies a hopelessly difficult assignment or one which is so vague that the students do not know where to start. Put the assignment in writing, either on the board or on hand-out sheets.

10. *Do something nice for your students occasionally.* Students will generally support a teacher who shows a sincere interest in them. This in no way suggests the necessity of coddling, babying, or bribing. It simply means an occasional anecdote, an extra effort toward understanding, or an ever-ready smile. It means being a friendly human being.

11. *Above all else, be alert.* Many teachers look at a class, but see nothing. The most terrifying forest fire had its beginning as a tiny little flame. Discipline problems, like fire, can be easily handled if the trouble is sighted in its early stages. Total class awareness requires conscientious cultivation.

Things Which Should Be Avoided

1. *Don't try to buy popularity.* Everyone wants to be liked. It is a basic human need. Many new teachers are so afraid of losing the friendship of their students that they go to extremes in an attempt to avoid such a loss. Some teachers go so far that they become "one of the group." Being friendly is a virtue in teaching but, once he loses his identity as the teacher, he will no longer be treated as the teacher. Sometime students need to be corrected or rebuffed. No one knows this more surely than the students themselves. They expect it. As long as a teacher is friendly and fair, he can take action when action is required, keep control, and give reliable leadership to the class without losing one ounce of the precious popularity he seeks and needs.

2. *Don't be a comedian.* This idea in no way suggests that a teacher should avoid developing his sense of humor. A pleasant personality and the ability to recognize humor in the panorama of life are essential characteristics of a good teacher. What students do not appreciate, however, is the self-styled comedian who feels obligated to "tell a joke" each morning, or who forces himself to be "funny" at nearly equal intervals throughout the day. The teacher who insists on such unnatural procedures invites unappreciative responses from his students.

3. *Don't talk through noise.* One of the most common mistakes made by teachers is that of competing with a room full of noisy students. At the very outset the teacher should make it clear that he will give everyone who has anything to say an opportunity, but that he expects the same consideration. Then, if he refuses to compete, if he will stop and wait for the offenders to give their attention, the habit of giving respect to the person speaking is soon established. If the teacher does compete, however, another kind of habit is formed: more people get into the competition, the volume of noise increases, and the control problem is immense.

5. *Don't enter into arguments.* Discussion based on important issues is invaluable if classroom presentations are to be interesting and vital. Proper discussion is also essential in the training of future citizens. If the teacher allows the discussion to degenerate into personal arguments, however, and if either the teacher or the pupils feel that the discussion is a personal attack, then the doors of distrust are thrown wide open and problems of discipline enter.

6. *Don't do things for students which they can do for themselves.* There are valid exceptions to this rule, but in general it is conceded that students who are busy doing constructive work are apt to be too occupied to find time for mischief. This does not suggest busy work. It is meant to be a warning. Teachers too often do parts of assignments or do spadework which could legitimately and profitably be done by the students. This frequently results in teachers having to control students who have nothing to do.

Handling Discipline Problems

In spite of many preventive measures, some discipline problems do occur in the lives of most teachers. Insistence that they should not occur, in view of the special care which has been exerted, is of little consequence. What is important is the identification of what can be done about some of these problems of control when they do arise. If there were one simple answer, it would be priceless. Since there is not, suggesting a few things to do and not to do may at least prove helpful.

Things To Do

1. *Remove privileges.* Caution must be used in applying this kind of action to problem students. If it appears that the teacher is saying, "If you won't play my game, I'll pick up my marbles and go home," then

such action is largely ineffective. On the other hand, if certain privileges have been established clearly as such, and it is just as clearly understood how they may be lost, then chances for effective results increase. For example, allowing students to select their own desks has been suggested as a way of avoiding discipline problems. Experience has indicated, however, that most students disturb less when they are seated near the teacher. If, from the moment the privilege is introduced, it has been clearly understood that misbehavior would result in its loss, the class will recognize the right of the teacher to move the disturbing student to a location more easily supervised. Study-time in class furnishes a similar example. Introduced as a privilege rather than a right, study-time becomes something that can be lost. The gravity of this loss can be emphasized by not changing the date when the assignments for which the study-time was given fall due. Once the students learn that if they are to keep the privilege of class study-time they must use it properly, fewer problems will arise. In both of these examples, however, the emphasis should be on the fact that students *lose* privileges rather than teachers *take* privileges away.

2. *Have private conferences with the offenders on their time.* "May I see you after class?" Such a request, immediately on the heels of misbehavior, indicates to the offender—and the rest of the class at the same time—that the teacher does not approve of the behavior involved and, moreover, that something is to be done about it. When the student reports, the teacher has the opportunity to hear the student's side of the story and establish, if possible, rapport with him. Such a conference must not appear to be a *lark*, or seeing the teacher after class will mean absolutely nothing. A thorough analysis of the problem and possible alternatives for the student should be carefully considered. Wherever possible, encouragement should be used rather than endless scolding since the more positive approach seems to be more productive than the negative one.

3. *Eyes are more effective than mouths.* If students disturb while the teacher is talking, he can frequently control such rudeness by simply fixing his eyes on the offenders while continuing his own presentation. If this should fail, many teachers have discovered that suddenly ceasing to talk while continuing their fixed stare toward the disturbing students creates such an uncomfortable situation that most pupils respond readily. Control based on eye movement and silence is far superior to control which relies on raised voices and crimson faces. Shouting breeds shouting.

4. *Allow students to save face if possible.* Animals will nearly always retreat from the hunter unless they are cornered. Once there is no escape, they will do anything that offers a way out. People are strikingly similar. Many students have been forced into even more serious behavior than was involved in the relatively minor offenses for which they were apprehended because they were cornered and could find no bearable way out of the situation. A thoughtful teacher arranges the atmosphere so that

the offender will, at one and the same time, recognize that he has been caught, that he is guilty, and that he must pay for the infraction—but that the situation is bearable.

5. *Make the punishment fit the crime.* Punishment is meant to counteract misbehavior and to deter reoccurrences. It is not meant to crush and obliterate the offender. Unreasonable punishment creates rather than corrects discipline problems.

6. *Reserve judgment when tempers flare.* Irrational decisions generally lack merit and often cause more trouble than good. If a teacher is infuriated and if the situation permits, he should defer taking action until he has had time to think, time to talk it over with himself—or perhaps a colleague. Once tempers have subsided, more rational and dispassionate action can be taken with the probability of something constructive resulting enhanced immeasurably.

7. *Call in parental help.* If parents are informed of their children's misbehavior in a diplomatic way, the results are frequently helpful. If, however, the teacher's report to the parents smacks of "I'm going to tell your father on you," then little other than resentment can emerge. If the parents, the student, and the teacher can sit down together and discuss the problem thoroughly, chances for success are increased greatly.

8. *Seek administrative help—judiciously.* Many authorities caution teachers to refrain from sending erring students to the office for administrative assistance. There is sound logic in such advice. In the first place, it frequently indicates a lack of professional training and ability if a teacher is in constant need of outside help. Secondly, the students soon learn that the teacher gives up rather easily and this becomes a challenge which they are all too eager to meet. When a teacher thoroughly understands these limitations, he naturally avoids such disciplinary action unless it becomes absolutely necessary. If, however, the teacher has done everything at his disposal to correct a disturbing situation with little or no success, he may then conclude that, in the interest of the rest of the class, he may no longer afford the time being wasted in constant disciplinary action. At this point he is perfectly justified in removing the disturbing influence from the classroom, even if it means sending the offender to the office. If the class fully understands the logic behind such action, very little prestige need be lost. Prior to sending an offender to the office, a good teacher will have talked to the student in private. He will have reinforced a concept which he has already developed in class: *Each student constitutes a valuable part of the class. No one student, however, constitutes a part so important that his value exceeds that of the entire group.* With this idea clearly understood, a teacher can defend his action to both the offender and the other students. Such action is based on the *unwillingness* of the teacher to sacrifice the entire group rather than his *inability* to cope with the situation. The class can understand this. It should be remembered, however, that a good teacher rarely is forced to use eviction as a disciplinary measure.

Things Not To Do

1. *Don't be a "gonnu" teacher.* A person who is always "gonnu" do something is quickly tagged by the students as a do-nothing. Clear explanations, perhaps a warning if critical appraisal seems to justify it, and then action appear to be the only way to establish the fact that a teacher means what he says. Using idle threats as a disciplinary weapon is worse than no weapon at all. Wild, ridiculous threats should never even be considered by a competent teacher.

2. *Don't use schoolwork as punishment.* Association is a powerful influence on people. If students associate reports and other school assignments with punishment, they will have difficulty in disassociating such assignments in the future.

3. *Don't be a "strong-arm" teacher.* Physical force proves only who is superior in terms of physical force—and this is never a justifiable issue in the classroom. There appears to be no sound reason favoring the use of physical force in disciplinary action—except, perhaps, in the very rare instance where a teacher must defend himself. Otherwise, a good teacher uses his mind rather than his muscles.

In spite of these many paragraphs devoted to the problem of avoiding and handling discipline problems, the surface has only been scratched. Basic to the entire problem is the realization that students do things—or don't do things—for reasons. Their reasons may not appear to be important to the teacher, but they are to the students involved. If a teacher is to be a truly good disciplinarian, he must concern himself with the causes. Perhaps if teachers remember this and utilize some of the suggestions given above, they may be able to spend less time worrying about this professional malignancy called "discipline" and devote more energy to their primary task—teaching!

A Principal's Advice to a New Teacher

ROBERT A. GRANGER

TO A NEW TEACHER:

A class knows you from what they see in you, hear from you and gather from your attitudes and mannerisms . . . so encourage them to expect the *patience* of a good teacher by indicating patience, the thoroughness of a good teacher by constructing your demonstrations carefully, and the fact that you ARE a good teacher by *teaching*, not displaying.

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Talk clearly. Use the device of *repeating* if you think there is a need.

And PAUSE frequently, allow your students time to collect into a sequence, into some sort of order their impressions of what you have said. *Nothing interferes with good instruction so much as confusion,* both from without and from within.

Do not expect immediate grasping of your point, illustration, or reference. After all, the material of the morning *should* be old stuff to you, but *new* to your class. Did you grasp what your lesson contains the first time you met its content?

Hold the attention of everyone. When attentiveness wanders, so does thought and, like a swarm of bees, one wanderer can lead the hive into the woods. Be prepared for that! Have something new and arresting up your sleeve—a game, a question, or tell a story, or drop a book, or just stand there in silence if you feel capable of carrying that little trick off, then begin over again.

But *don't* complain, *ever,* about lack of attention. The fault is *yours!* You are *supposed* to be the interesting one. See that you earn that distinction as a teacher. Better to go far afield and retain the respect of the class than to belabor a point on them without interest; for example, if it's the weekend of the big game, the big dance, a student uprising, don't fight it. Surprise them with a choice bit of timely wisdom, give them a five-minute exercise and then let your hair down and talk about what interests them. A good teacher expects a certain amount of such interrupting to his schedule and so plans on it, like holidays in industry.

Be absolutely impartial. Make a practice, a fetish, of it.

Be eager, especially about your subject and, being eager, be aware that others may have to learn to share your eagerness. You may have to entice them into a readiness for this eagerness concept, so many of the young being prone to put on the armor plate of sophisticated indifference, but, by and large, the young like to laugh. Laughter can be the salt of learning. Note that I said "can be," for it takes taste and judgment to know when to laugh, when to frown, when to encourage, and when to discourage. That is teaching. Would you have it otherwise? But how monotonous all one tone would be, gay and frivolous or acid sour or learnedly dull—heaven forbid! To be *dull* is the cardinal sin—like being dead. For living is growing and growing is learning and you are one of the landmarks along the road of learning. Then shine!

Expect no more than is reasonable. After all, you are not responsible for anything but what *you* contribute to each member of your classes. However, see that you contribute and do not fall into that common apology for inadequacy by blaming a pupil as "hopelessly dumb, stupid, uncooperative, lacking in foundation, below standard, *etc., etc.*" These are all quotations from some sort of judging and a *teacher* has nothing in common with a judge, anymore than a judge has anything

to do with teaching. By the time the judge goes to work, it is too late for the teaching.

Discipline is something a teacher should expect while anticipating that it will frequently need improving. Some teachers obtain automatically what other teachers never attain even after years of earnest effort. However, *note well* that the attentive, controlled class has no need for more than one command, nor any need for accusations, nor for loudness, threats, insults, or any such inane and inadequate resortings. Keep in mind the good army sergeant you likely have met—one clearly stated order and an end to it. Stay in command of your group. Do not resort to argument. *Expect obedience, courtesy, and good behavior.* Step on the first inch of anything to the contrary, and if you have to, carry a promised action right through, right up to the principal's office if necessary.

You are in charge of your class and its instruction because it is up to you to produce commendable results. No two classes are identical, so be aware constantly of any special needs or ways that will help you and yours—and do not hesitate to attempt a possible improvement. Also, do not hesitate to repair an ill-advised venture. These are young minds you are dealing with and your contact with them is precious, not for an instant to be carelessly treated.

Never, never, never go to class unprepared. That is like a carpenter showing up for work without his tools. If you have to face the dilemma of "what shall I do with them third period this morning" (as you undoubtedly will), be honest. Your lack is understandable and no explanation is necessary. Turn the class over for discussion, for repair of recent weaknesses, or for one of those "games" you should have up your sleeve. But *don't* try to bluff your way through. It will take months to erase the stain of that sham and some of the blemish you never will remove because it is where you can't get at it.

Encourage them! Don't be maudlin or sticky about it but, when praise is due, give it. Likewise, don't condemn. Let your correcting be so done as to leave the fabric of self-respect intact.

Strengthening Schools in the 1960's

CHARLES R. KELLER

I SOMETIMES wish that education were not so common and were not something that everybody approves. I sometimes wish that it were forbidden. Then we would rally to its defense; then we would support it as it should be supported. This cynical statement which I really do not mean derives from one of Mark Twain's gems, to wit: "Adam was but human—this explains it all. He did not want the apple for the apple's sake; he wanted it only because it was forbidden. The mistake was in not forbidding the serpent; then he would have eaten the serpent."

Actually, things are in motion in education these days. Educators who have to make decisions and to act on the basis of them are challenged as never before. Laymen must be bewildered at times—particularly when educators disagree and hurl verbal and written brickbats at one another in a way that reminds me of a comment made half a century ago by Finley Peter Dunne's "Mr. Dooley," one of my favorite commentators on the American scene in the early 1900's. Said "Mr. Dooley": "But we're wan iv th' greatest people in the wurruld to clean house, an' th' way we like best to clean th' house is to burn it down."

In the midst of these stirrings, it is reassuring to find the people of this area—educators and laymen—considering ways and means of strengthening their schools in the 1960's. I thank you for this opportunity to think with you about these ways and means. You should know more about me than you do.

1. For more years than I hope you will think possible, I was a college professor, a teacher of American history at Williams College in Williamstown, Massachusetts. I was pretty well stuck to my campus. To some extent I was covered with ivy and encased in tradition. Now I call myself a "college professor gone right." Through two Programs, the Advanced Placement Program and the John Hay Fellows Program, I have pierced what I call "the sheepskin curtain" which we had rung down between schools and colleges. I am having the time of my life in what I call education-in-the-large.

2. Although I know what is *not* being done in education and am acquainted with some of its weak points, I like to emphasize what is being done and education's strong points. I do not believe, as do many vocal critics of education, in generalizations, nor do I think that I can stimulate by continuous destructive criticism. The story is told of a first-grade teacher who drove her car into a garage door and dented a fender

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I reject the version which has the teacher, infected by the "Why Johnny Can't Read" teaching methods, climb out of her car, take a look, and exclaim, "Oh! Oh! Oh! Look! Look! Look! Damn! Damn! Damn!" Instead, I think of all the first-grade teachers who have never run their cars into garage doors.

3. The Advanced Placement Program deals primarily with able and ambitious students, the John Hay Fellows Program primarily with able and ambitious public high-school teachers and school administrators. But I like these Programs because they really benefit *all* students at *all* levels. I agree with my secretary who once expressed the hope that some day there would be a program for tenth-grade students doing tenth-grade work in the tenth grade. I second the statement once made by John Gardner, president of the Carnegie Corporation, to the effect that "We must have respect for both our plumbers and our philosophers or neither our pipes nor our theories will hold water." But I contend that since good educational practices, like water, flow downhill, we must never lose sight of the academically talented and interested students and their opportunities for growth.

4. I am and have been for many years a taxpayer. Like you, I want money to be spent in a careful, judicious manner. I want good education for your children and mine. Like you, I want to strengthen the schools in the 1960's.

Situations Have Changed

As a background for a consideration of ways and means of strengthening the schools, let me mention numbers. We have taken on an enormous educational job in the United States. More than one quarter of the nation is in school. Everybody goes to elementary school, practically everybody goes to high school. When I attended high school, from 1914 to 1918, I thought that everybody of my age was there too. Actually only about 30 per cent of the eligible youth were in high school. Today 90 per cent of those eligible attend. More than 50 per cent of today's high-school graduates continue their education beyond high school. College enrollments, now at a record high of nearly 4,000,000, threaten almost to double by 1970.

Here is no bulge or tidal wave. Here is something that will be with us for a long time. I am reminded of the young soldier from Kansas who one night in 1862 during the Civil War was doing sentry duty near the mouth of the James River. His ignorance of the ocean and of the tides was complete. All night he stood dutifully at his post while the water rose to his neck. To an officer who came by in the morning, he reported bravely, "Sir, this creek has sure riz." I say to you that the educational creek has "sure riz" during the past few years.

Consider, too, the explosion of knowledge: the increased amount that can and must be learned about various subjects, the many subjects a person who wants to live responsibly and effectively must know. Science

and mathematics are being stressed, as they should be, so that we may make things, grow things, use things, measure things, deal with nature and the elements, cope with any antagonist who may appear. The humanities—subjects like literature, language, history, philosophy, music, and art—must be stressed too. While being educated, people should develop their values, their standards, their success ideals. They should learn how to live with themselves and with their fellow men and in relation to forces over and above themselves. I am proud of the John Hay Fellows Program which speaks up and puts up for the humanities, but we need both science and the humanities. It is a case of "both-and," not "either-or." A knowledge of science enables us to live; a knowledge of the humanities enables us to live well. In strengthening schools in the 1960's, both must be stressed.

In this strengthening, I believe that there should be a sharper delineation between rearing and educating than there is now. Rearing refers to the fostering of offspring. It is concerned with the development of character, with good habits, manners, morality, emotional stability, health, the knowledge of right and wrong, the ability to get along with others or to differ from and with them amicably. Rearing should be chiefly the responsibility of parents, of the churches, of society as a whole, and of the individuals themselves. Schools are involved, of course, but the task of rearing should not be the schools—not chiefly, at any rate.

The schools should educate, and education should be concerned primarily with developing the mind. The purpose of the school should be, through a study of specific subjects and some general education, to develop the minds of students. They will then live responsibly and effectively, we hope, in their communities, in the United States, in the world—and with themselves—and be able to deal effectively with basic issues, with life's problems and opportunities. If schools educate well, they will make a marked contribution to rearing. The schools can do things that no other agency can do; their effectiveness is lessened when they assume too many functions of the family, the church, the recreation center, and the policeman.

Recommendations About Teachers

As I continue this discussion of ways and means of strengthening schools in the 1960's, I turn to teachers and administrators. They hold the keys to quality education as they always have. The curriculum is important, buildings are important, but without good teachers and able administrators all else is in vain. I want to make seven points about teachers:

1. We must do a better job of educating teachers, particularly in making sure that they know their subjects. Teachers must know their subjects, not only to enable them to teach effectively, but also to give them the self-respect and the self-confidence so badly needed by all human beings.

2. We must pay more adequate salaries.

3. We must reduce teachers' loads so that their enthusiasm and knowledge are not too quickly worn out or dried up.

4. We must stop making teachers do too many things that have nothing to do with teaching.

5. We must give teachers opportunities to grow intellectually. I like the John Hay Fellows Program because, through its year fellowships and Summer Institutes, it provides such opportunities. Noteworthy is the fact that more than one third of our 83 Fellows for 1960-61 are receiving part of their stipends from their schools.

6. Secondary- and elementary-school teaching must become more of a profession than it is now. We must find ways and means of promoting teachers as teachers, as well as by moving them to administrative posts. Schools will never be really strong until we stop taking teachers out of classrooms in order to promote them. Furthermore, we must stop paying salaries on the basis of length of service and in-service courses alone. We must give consideration to the quality of a teacher's work.

7. We must do the things which I have suggested in the hope that we can attract into teaching more of our most capable people than we do at present. Let me at this point quote Aristotle who once wrote, "They who educate children well are more to be honored than they who produce them."

Recommendations About Administrators

And let me make three recommendations about administrators—when I say administrators I mean guidance counselors too—as part of the strengthening-of-schools process:

1. That the duties of school administrators be streamlined so that they can become the educational leaders whom we must have if there is to be quality education;

2. That school administrators get closer to what goes on in the classrooms than they do now;

3. That school administrators also need to have their intellectual batteries recharged every now and again. I like the John Hay Fellows Program because it includes administrators in its Summer Institutes in the Humanities.

You will notice, I hope, how much I talk about people in discussing ways and means of strengthening schools in the 1960's. I agree with Ralph Waldo Emerson who once wrote, "Every revolution was first a thought in one man's mind . . . every reform was once a private opinion." In everything that I say, I am thinking primarily of the girls and boys, the young men and young women, your children and mine, who will be receiving their education in these strengthened schools. Even as I now turn to procedures, I assure you that I am thinking of the young people who will be in the schools.

A few minutes ago I quoted Aristotle. Here now is a quotation from Francis Bacon that I like: "He that will not apply new remedies must expect new evils; for time is the greatest innovator." Here is as good an introduction as I know to what I want to say next. Schools will be strengthened in the 1960's only if they are flexible and experimental as well as quality centered and academically sound. The lead in experimentation will be taken by administrators and teachers. What is needed from laymen is understanding and support.

The Curriculum

Let's take a look at the curriculum. What can we do? We should stop tinkering; we should stop doing things in a piecemeal manner. In individual school systems, to some extent on the state and even the national level, and with colleges and graduate schools in the picture whenever possible, we should rethink the entire educational process and structure. We should begin by formulating a set of purposes, with priorities and a philosophy of education clearly stated. We should then make plans to achieve the stated goals. Boldly, realistically but imaginatively, vertically not horizontally, with well-worked out but flexibe plans, in school systems kindergarten-through-twelfth-grade curricula should be constructed. Whenever possible, we should plan beyond the twelfth grade and into college and even graduate school. We have done too little about "watered education."

Such planning will involve, right at the beginning, questioning our policy of having all children begin school at approximately the same age. All children aged five are not alike. We should think seriously, too, of nongraded elementary schools. In a few places we have such schools now. I like them. Why should students have to "wait" at just the time when they are most eager to move ahead and to learn? In the first four grades, the emphasis should be placed on reading, writing, oral communication, listening, viewing, mathematics, elementary ideas in science, music, and art—all effectively taught.

Questions should be asked, too, about self-contained classrooms in elementary schools. How many teachers who teach *all* subjects can do justice to them all, with so many new developments in so many subjects? I know the arguments against departmentalization or team teaching, and for the current, one-teacher-to-a-grade arrangement. I still raise questions.

I have mentioned new developments in so many subjects. The curriculum is in motion and practically every subject is being rethought. A revolution is occurring in mathematics. No longer are subjects sliced into convenient year or term segments. Mathematics has become an integrated subject, with concepts taught when students need to know them. In the twelfth grade in many schools, students are studying "modern mathematics" or calculus. In many eighth grades, students are studying modern algebra. The mathematics program before the eighth grade is being constantly improved.

The conceptual approach is appearing in science, emphasizing students' ability to figure things out for themselves rather than simply to memorize facts. New physics, new chemistry, new biology courses have been recommended. In a number of schools, biology is now a ninth-grade subject, with resultant changes in the science program for grades ten, eleven, and twelve, and for the grades before the eighth.

Language laboratories and the oral-aural approach simply mean that there are new ways of teaching foreign languages which stress speaking and listening. And in many school systems foreign languages are being taught before the ninth grade. I am recommending the study of foreign languages no earlier than the seventh or eighth grades until I am convinced that schools have teachers in earlier grades who really know a language and how to teach it to fourth-, fifth-, and sixth-grade pupils. Furthermore, schools must have continuous programs, from the grade when language study begins through the twelfth grade. You may hear people saying, "There are times when two and two do not make four." This is one way of saying that two years of one foreign language and two of another in high school is not a good idea. It is much better to take three or four years of one foreign language.

National groups for improving the teaching of English are now at work. They all stress writing-writing-writing—in all classes, not just English classes. And quality reading rather than quantity reading, the reading of complete items rather than snippets, and the introduction of the analytical and interpretive as well as the descriptive and narrative approach as early as possible. "Teachers must be better educated," these groups also say. "Classes must be smaller; teachers should have help in the reading of papers."

The social studies—my own subject—is most in the educational doldrums. But some people—I am one of them—are speaking up for "history and the social sciences" as a more exact and meaningful term than "social studies," for more substantial content in courses and better reading, and for a sequential rather than a cyclical arrangement of courses. The weakness of this cyclical arrangement is illustrated by the fact that American history is currently studied over and over again in survey courses—in the fifth grade, the eighth grade, and the eleventh grade, and then again in college, with practically no consultation among teachers, with practically no attempts at articulation.

I have finally mentioned articulation. I believe that schools—indeed education from kindergarten through graduate school—will not be really strong until teachers in particular, with encouragement from administrators, become skilled in the art of articulation. Some of you are undoubtedly asking, "What is articulation?" I admit that a short time ago I did not know what the word "articulation" meant as used in education. Indeed, I did not know that the word *was* used in education. If asked, I would probably have replied that it had something to do with the opposite of tongue-tiedness. But I have learned. Articulation means

learning everything that can be found out about a student in one grade or one school, and building the work of the next grade or school on what has been discovered.

We are doing a poor job of articulation at the present time. As a result, boring, de-motivating, expensive repetition goes on, and many students, duplication conscious long before their teachers, lose interest in their work. I am convinced that the kind of curriculum planning which I have advocated will lead to improved articulation of work throughout the school system. The result will be the strengthened schools that we all want.

Don't be disturbed if you hear about programed instruction of which programed books and teaching machines are a part. Good programed instruction will involve students directly in the learning process, and may induce them to learn things for their own sakes rather than for the teacher. It will enable students to move ahead at their individual paces, and to learn whether their answers are right or wrong immediately rather than tomorrow or next week. Programed instruction and teaching machines will not replace teachers. They will do effectively some parts of education. They will free people to do the things that only people can do.

Support "demonotonization" of education as a way of strengthening schools in the 1960's. All classes do not have to meet five days a week for the same amount of time or with the same teacher each day. Education should release, not confine. In "cells and bells" classes, architecture and schedules control men. Men should never let this sort of thing happen to them, particularly in education.

There is team teaching, for instance, which "demonotonizes" and does other things. Two or three sections of a course are scheduled in the same hour. Sometimes the sections meet for large-group lectures, sometimes they meet with their individual instructors, sometimes some of the students do independent work. Large-group lectures, with overhead projectors expertly handled, give teachers opportunities to work up their specialties. Why not lead from strength in education? In team teaching, differences in ability among teachers are recognized, and the best teachers work with all students. Independent work puts the emphasis on learning where it belongs and makes necessary larger libraries than most schools have. And as I have said, education is "demonotonized." Such "demonotonization" is possible only if flexibility is built into any new school or into reconstructed schools.

I hope that many high schools will be able to do Advanced Placement Program work. Under this Program the schools offer advanced, college-level work for able and ambitious students. The students then take advanced placement examinations, and the colleges and universities give credit and advanced placement for satisfactory performance in the school college-level courses and on the advanced placement examinations.

Don't worry if your students are being challenged in schools, or are even working harder. Don't worry, provided that the teachers are mem-

bers of the "draw-it-out" rather than the "pour-it-on" school of teaching and do this challenging in qualitative rather than quantitative terms.

I have said little about finances and the strengthening of schools. You know as well as I do that if we want good schools, we have to pay for them. You know, too, that if we want good schools, we can afford them.

Strengthened schools will be academically sound and quality centered as well as flexible and experimental. They will produce education which Archibald MacLeish recently defined as a wedding between "the knowledge of the fact and the feel of the fact." I can think of nothing more important than strengthening schools.

The Supervisor, the School Newspaper, and Public Relations

PAUL J. AREND

IN ORDER for our democracy to be perpetuated, we must have an educational system for the people and by the people, but formulated only after all concerned have been enlightened as to the purpose and needs of the school. It is the job and duty of every supervisor to aid in this project. Many avenues may be taken by him in this direction. This article shows how the supervisor of the school newspaper can make it serve as a means of public relations.

Education in our democratic society is supported by the general public and must be viewed favorably by it. It is reliant upon the community denizens to further its growth. To gain public support and favorable reactions, education must be interpreted to the community laymen, community leaders, community groups, and the wider public in an ever "continuous, honest, inclusive, understandable, dignified but aggressive" manner, reaching everyone through all possible facilities at hand.[1]

The newspaper is a chief means of such interpretation for the school. Not only commercial newspapers, but also school newspapers themselves have a definite influence upon the attitudes and ideas formulated by the public. This article will concern itself primarily with the utilization of the school newspaper by the supervisor as an education interpreter and will endeavor to show its connection with commercial community papers.

[1] J. Erle Grinnell. *Interpreting the Public Schools: A Manual of Principles and Practices of Public School Interpretation with Special Emphasis on Published Materials.* New York: McGraw-Hill Book Company, Inc. 1937. P. 26.

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Surveys show that nearly three fourths of all school newspapers taken home by students are read by the parents.[2] Many parents rely upon these papers for announcements of future school events. Reading these papers helps some parents feel that they are keeping up with their child's interests. The school paper then acts as a tie between the home and the school which tends to solidify a relationship which may help the school spirit and morale.

Frequently school newspapers are forwarded *in toto* to the local commercial papers. At other times, outstanding stories are submitted. The community papers often more than welcome educational news to feed their readers. The fact that such news stories were written by pupils gives added significance to public estimation of the situation. If the school newspaper is to be such a prime factor in the school's education interpretation program; then the paper should strive toward certain general objectives:

1. Be an organ designed to give general and special forms of information about the school and its needs
2. Promote cooperation among taxpayers, parents, the school, and its students
3. Reflect the life and activities of the school
4. Unite students and parents in cooperative projects
5. Be primarily for the students and by the students

The school newspaper, in order to be effective in this field, must be published by a group that is well acquainted with the institutional activities and the general aims of the school's educational program. A thorough knowledge of journalism and how the paper should be planned, prepared, designed, and distributed is necessary. As previously stated, the paper is to be produced by the students, but let no one deny them the wisdom of a good adviser and supervisor for guidance.

The supervisor, adviser, and students must know what constitutes news in order to fulfill the desired outcomes. What do the students, parents, general public, and community want to know about the school? What kind of news do commercial papers want to reprint for a wider circulation? Grinnell,[3] Fine, and Anderson[4] in their books have categorized the following check list for news.

1. Immediacy—This pertains to news items which may be old or new, but which are being released for the first time. It may concern announcements or predictions of school events.
2. Proximity—The public is interested in news which is close to them.
3. Consequence—Readers are much more interested in events which affect them.

[2] Leslie W. Kindred. *School Public Relations.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1957. Pp. 272-273.

[3] Grinnell, *op. cit.*

[4] Benjamin Fine and Vivienne Anderson, *The School Administrator and the Press.* New London, Connecticut: Arthur C. Croft Publications. 1956.

4. Prominence—Names of prominent persons or places in the news are always of interest.

5. Unusualness—Those things which ordinarily do not happen, such as the high test score in a state examination or a student's work being published nationally, are important to people.

6. Human Interest—News items that show sacrifice, heroism, endurance, and deep interests attract readers.

7. Drama—All are interested in reading of someone's struggle to gain his goal and the attainment of it.

News items of worth should fit into one or several of the above categories and may also be broken down into subject groupings. Utilizing newspaper articles from *The Defender*, a school newspaper published by the students of North Point Junior High School in Baltimore County, Maryland, I will list some of the subject groupings: Student Achievement (scholarship, physical, and social), Community Influences, School Facilities, School-Wide Achievements, School Curriculum, and Faculty and Staff News.

The principal of a school is the most logical person to be instrumental in developing a sound program by which the school newspaper can be used as an important part of education interpretation to the community. This project may come directly under his attention. He should adjust teaching loads and other duties to permit members of his staff to give part of their time to the newspaper organization. In such an enterprise, he may, through his teachers, reach his pupils, who will in turn reach their parents—part of the general public.

"The best school papers have an administrator and a journalism teacher behind them who have discovered the secret of bringing out the best in the students and not forcing the teacher's or principal's best on students."[5] Not only must the principal have a capable teacher as the paper's adviser, but he should also express to both student newsmen and the adviser a sympathetic attitude toward their endeavors. The principal should also see that the proper publication facilities are available so that the project may be carried out to its fullest. Above all, the principal must know that he should avoid personal prominence and stress his school through his students and teachers. The community that believes in its school always knows the name of its principal.

How much control the supervisor should maintain over a school newspaper has been a widely discussed topic. The pendulum has swung to both extremes—from complete freedom whereby all the responsibility is placed on the discretion of the adviser to complete censorship whereby every article is read before publication. Somewhere between can be found the solution. In most cases, adviser and students settle their problems and then present conclusions on major items to the principal for final approval. A smoother road may be traveled by all concerned if a

[5] Gunnar Horn. *Public School Publicity*. New York: Ivor Publishing Co., Inc. 1948.

general meeting is held at the beginning of the school year. At this time, common goals for the newspaper may be discussed and agreed upon. At this meeting, it would be wise for the principal, adviser, and students to take into consideration the views which parents may hold on various kinds of newspaper items.

The following procedures may be employed by the principal in assuring his school a prominent place in the role of education interpretation:

1. Select a capable adviser to organize and maintain a journalistic paper.
2. Meet occasionally with the staff to insure:
   a. That they realize the importance of their work and its influence on the public
   b. That they see the place they occupy in aiding school progress
   c. That they understand that their principal is ready to cooperate and eager to help them.
3. Have the adviser submit annual reports on objectives and accomplishments of the newspaper.
4. Allow adequate time, facilities, and equipment for the adviser to do good work.
   a. Maintain the same adviser
   b. See that his student material is capable.
5. Meet with the staff for yearly critiques of the paper.
   a. Check what students have accomplished
   b. Note ways to improve
   c. Plan for the next year, or have a two- or three-year plan.
6. See that the school paper receives a wide circulation—to homes, places of business, school and community groups, PTA, and community newspapers.
7. Encourage the entire school staff to be alert for news and to direct it to the school newspaper.
8. Encourage student desire to be part of the school newspaper by giving public recognition of accomplishments.
9. Express your concern with the objectives of the school paper at faculty meetings and enlist support.
10. Know what is published in your school newspaper and use it as a reference or in regard to your many contacts.

It is common knowledge that commercial newspapers are printing more educational news than ever before. This seems to be in an effort to satisfy an unquenchable thirst on the part of readers for this news. With a strong newspaper organization following good journalistic procedures, a principal has a ready made vehicle by which to help supply the demand for educational news.

Certain news articles appearing in school newspapers demand wider circulation and make worthy news items for community papers to give their readers. Some community papers allot sections of their papers for school news and either choose the news articles themselves from the school newspapers or use the articles supplied by journalism students at the schools.

Another method of supplying the public with educational news has been seen in the appearance of school pages in commercial papers published with student-professional cooperation. An example of this

method can be seen in the school page appearing in the Harrisburg, Pennsylvania, *Patriot* and the *Evening News*. The Correspondents Club of these jointly owned papers is headed by a well known, former city editor, C. Curtiss Demmy, and has an enrollment of over 150 student correspondents representing over 110 schools in that area.

Correspondents are paid regular space rates, given bonus awards for feature or front-page stories, given by-lines when applicable, attend monthly conferences for discussions and talks, receive monthly bulletins on club activities, and act as student journalism speakers. Representatives of the two papers make frequent visits to schools to address assemblies and career conferences.[6] This type of program makes a direct tie between the school and the commercial newspaper, enabling better and wider circulation of educational news through its activities.

The school newspaper is becoming more widely used as a medium of school journalism as evidenced by some 4,000 persons who go as delegates to school press conferences such as Columbia University Press Conference. And over 24,000 secondary schools are estimated to have school publications of some kind.[7]

Perhaps there is a direct relationship here between students' interest in journalism and the growth of school newspapers with the growth of educational news appearing in commercial papers and the demand for such news by their readers. "The administrator who neglects his school's opportunities in this direction is letting slip an important cog in the public relations program."[8]

Extra Duties for Teachers

MONTE S. NORTON

A Major Problem in Teacher Load

"EXTRACURRICULAR duties seem to be our greatest problem in teacher load." This comment by a public school teacher in a recent major study of teacher load points up the attitude of many classroom teachers. In any discussion of teacher load, the topic of extra duties for teachers looms important.

Such tasks as supervision of study halls, sponsorship of students' activities, committee work, teachers' meetings, and other non-instructional activities comprise the teacher's extra duties or cooperative load. Varying

[6] Fredrick W. Maguire and Richard M. Spong. *Journalism and the Student Publication.* New York: McGraw-Hill Book Company, Inc. 1951. Pp. 417-419.

[7] Paul B. Jacobson, William C. Reavis, and James D. Logsdon. *The Effective School Principal.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1956.

[8] Horn, *op. cit.*, page 123.

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points of view are expressed by teachers in regard to duties not directly related to teaching. Many feel that the primary concern of teachers is that of directing learning for pupils; extra duties interfere with the accomplishment of this basic task. Others comment that extra duties are seldom assigned on an equitable basis and feel that these duties should be assigned in view of the total load of the teacher. Another point of view centers upon the idea that teachers do not mind performing extra duties if they receive commensurate pay; teachers deserve extra pay for extra duties.

What percentage of the total load of the teacher is comprised of extra or cooperative duties? Can extra duties of teachers be measured objectively? What percentage of the teachers generally favor extra pay for extra duties as opposed to assigning such duties equitably without additional pay? What guidelines for assignment of extra duties should be considered by administrators? The purpose of this article is to present answers to these important questions.

Several studies concerned with the cooperative load of the individual teacher have been made since an early study of teacher load by Koos[1] in 1922. In 1932, Douglass[2] presented one of the most objective and comprehensive formulas for measuring teacher load that had been proposed up to that time. In this formula, the extra or cooperative duties were considered as being equivalent to one half the time load required in teaching and preparing for an average class of 20 pupils for one period of 55 minutes. The coefficient of five tenths was not backed by any authoritative research, however, and this weighting was revised after a major study by Jung[3] in 1948. The 1950 version of the Douglass formula considered the cooperative load of the teacher as being equivalent to six tenths the time load required in preparing and teaching an average size class of 25 pupils for one period of 50 minutes. The Douglass formula reduces the total load of the teacher to a single index number which can be compared with similar figures of other teachers.

The extra or cooperative load of the teacher can be determined quite easily by using only the last term of the Douglass formula:[4] Cooperative Load $= .6\ PC \left[\frac{PL + 50}{100}\right]$ with PC representing the number of class periods spent in supervision of study halls, students' activities, teachers' meetings, and other non-instructional duties and PL representing the length of class periods in minutes.

[1] Frank H. Koos, "The Load of the High School Teacher," *American School Board Journal*, August 1922.

[2] Harl R. Douglass. *Organization and Administration of Secondary Schools.* Boston: Ginn and Company. 1932.

[3] Christian Wood Jung, *The Development of a Proposed Revision of the Douglass Formula for Measuring Teaching Load in the Secondary School*, Doctor's Thesis, School of Education, University of Colorado, Boulder, 1949.

[4] Harl R. Douglass, "The 1950 Revision of the Douglass High School Teaching Load Formula," *The Bulletin of the National Association of Secondary-School Principals*, May 1951, p. 14.

To find the cooperative load of the teacher, divide the total number of minutes spent per week on the average of all extra duties not directly related to teaching by 55. Substitute that number carried to one decimal place in the last term of the formula. For example, a teacher spending an average of 220 minutes per week on cooperative duties would have the following index as computed by the formula:

$$\text{Cooperative Load} = .6\ PC \left[\frac{PL + 50}{100}\right]$$

$$= .6\ (220) \left[\frac{PL + 50}{100}\right]$$

$$= .6\ (4) \left[\frac{55 + 50}{100}\right] \text{(class period length 55 minutes)}$$

$$= 2.4 \times 1.05 = 2.52 \text{ Douglass units}$$

Similarly, a teacher spending two hours on the average per week on cooperative duties and teaching in a school with class periods of 55 minutes would have a cooperative load of 1.39 Douglass units. The teacher having an average of 275 minutes of cooperative duties per week and having class periods of 45 minutes would have a cooperative load index of 2.85 Douglass units. Thus, teachers and administrators have an equitable means of measuring objectively the cooperative load of the individual teacher and can compare loads of teachers in similar teaching situations. Of course, administrators would want to apply the entire formula in order to determine the total teacher load of the individual. It has been estimated that the teacher load of 30 teachers can be determined in approximately two hours by utilizing the Douglass formula.

What percentage of the total load of the teacher is comprised of extra or cooperative duties? In a recent major study of teacher load, the following data were computed:[5]

Table 1. Average Teacher-Load Units According to Subject Matter Area and Percentage of Time Spent in Cooperatives

Major Subject	*Average Teaching Load*	*Average Cooperative Load*	*Average Total Teacher Load*	*Percentage of Time Spent in Cooperatives*
Social Studies	24.49	10.02	34.51	29.0
English	26.00	6.88	32.88	20.9
Art	22.45	7.09	29.54	24.0
Home Economics	24.11	7.84	31.95	24.6
Music	24.46	6.67	31.13	21.4
Mathematics	23.55	6.62	30.17	21.9
Agriculture	29.89	8.05	37.94	21.2
Industrial Arts	22.20	7.76	29.87	25.9
Physical Ed.	20.24	11.26	31.50	35.7
Commerce	24.10	5.86	29.96	19.6
Foreign Lang.	24.45	5.50	29.95	18.5
Science	24.60	7.56	32.16	23.5
All Teacher Average	24.21	7.59	31.80	23.9

[5] Monte S. Norton, *Teacher Load in Nebraska High Schools in Cities from 5,000 to 25,000 Population*, Doctoral Dissertation, University of Nebraska, 1959.

As shown in Table 1, teachers participating in this research investigation were spending on the average 23.9 per cent of their time on extra or cooperative duties. In the subject-matter area of the social studies, teachers were spending 29.0 per cent or nearly one third of their time in cooperatives. The extremely high percentage of 35.7 for the area of physical education is due in part to the fact that coaching duties in after-school athletics were included in the cooperative load. Several other major research studies of teacher load such as the study by the Research Division of the National Education Association[6] have found similar results in regard to time spent on extra duties by teachers.

What percentage of the teachers generally favor extra pay for extra duties as opposed to assigning such duties equitably without additional pay? Three hundred fifty-four public high-school teachers were asked two direct questions in regard to cooperative duties in a study of teacher load in 1959. One question was stated as follows: Do you receive extra pay for any of the duties reported under question 9? Question nine included all of the cooperative duties assigned to the teacher. Nearly one half of the teachers reported that they did receive extra pay for some of the duties listed. One hundred fifty-eight, or 43.5 per cent of those reporting, answered "yes" to this question. Extra pay was received for the most part for such assignments as coaching, audio-visual work, supervision or ticket selling, working with special music groups, or the sponsoring of special clubs within the school.

Teachers were asked their opinions as to the most equitable way of handling extra duties—some plan whereby extra pay is given for extra duties or some plan whereby duties are distributed as evenly as possible with no extra pay. Of the 354 teachers giving answers to these two plans, 248, or 68.3 per cent, favored extra pay for extra duties performed. One hundred six, or 29.2 per cent of those participating, favored a plan whereby extra duties are distributed on an equitable basis with no extra pay.

Teachers have definite recommendations for improving the teacher load situation. A few suggestions by teachers concerning extra duties for teachers stated in a study of seventeen public high schools are as follows:

Home-economics, woman teacher: An ideal situation would be to hire an individual to supervise the halls, detention hall, *etc.*, and free the classroom teacher for work relating to the classes.

Science, man teacher: Extracurricular duties seem to be our greatest problem in teacher load. I suggest that a study be made of what constitutes a reasonable load for an individual teacher and also what constitutes a reasonable assignment in regard to extracurricular duties.

Home-economics, woman teacher: One main criticism of the teacher load is the addition of duties and responsibilities without extra time to carry out these duties.

[6] Research Division, National Education Association, "Teaching Load in 1950," *Research Bulletin*, February 1951.

English, woman teacher: I would recommend that administrators be certain that extracurricular duties and activities are assigned to teachers whose teaching load and paper work are light; some objective measure of the load is needed.

Mathematics, man teacher: I feel that teachers ought to be paid for work required outside of regular teachers' hours.

Art, woman teacher: Study the load situation so as to become aware of the load (including extracurricular) and then adjust the load where it obviously was needed.

Home-economics, woman teacher: Work with the superintendent and the school board in evaluating the time spent in extra duties.

In view of the foregoing information, it seems obvious that extra duties for teachers are of paramount importance in the over-all work load of the teacher. Furthermore, certain devices make possible the objective measurement of the total load of the teacher as well as a measure of the extra, or cooperative, load of the teacher. Too, major studies of teacher load have indicated that teachers in various subject matter areas are spending from one fifth to one third, approximately, of their time on duties not directly related to teaching.

It would seem advisable for administrators and others concerned with the educational program to consider carefully the assigning of extra duties for teachers. A few guidelines of importance for schools concerned with cooperative duties for teachers are as follows:

1. Administrators should evaluate the present extra duties assigned to teachers in terms of their significance, value, and contributions to the total program of the school. Unless attention is directed continuously to the cooperative load of the teacher, there is a tendency to add new duties to the load of the teacher without appraisal of the over-all workload of the individual. Too, frequent appraisal of the extra activities required of teachers can be instrumental in determining duplicated efforts on the part of teachers, activities which are not making a worthy contribution to the educational program, and needed changes in the cooperative duties being required of teachers.

2. In reviewing the present extra duties assigned to teachers, administrators need to give serious thought and attention to the total teacher load of the individual. By use of such formulas as the Douglass formula, objective measurement of individual teacher loads becomes possible. Thus, administrators can compare loads of teachers within the school and make obvious adjustments which the results of objective measurement make apparent.

3. Cooperative duties must be wisely assigned. Caution must be taken not to assign duties to the most capable staff members merely because they often are the most cooperative and resourceful. Too, it seems best not to assign the new teacher the most difficult extra duty assignments on the basis that the more experienced teachers have "served their time" on these tasks. After the total load of the teacher has been determined, more equitable assignments of extra duties can be decided.

4. Discussions of teacher load problems with faculty members on an individual basis or in group meetings will pay dividends in terms of teacher morale and attitude toward assignments. Through group discussion, staff mem-

bers become more fully aware of the place of extracurricular duties in the total program of the school. Too, better understanding of the various problems of teacher load facing the administration can lead to better solutions to these problems.

5. As schools work to improve programs of instruction in various subject matter areas, it seems advisable that they keep in mind the effects of new recommendations on the work load of teachers. As efforts are put forth to update and improve the educational program for pupils, it should be remembered that one of the most direct roads to improvement of programs is through the equalization and reduction of teacher load. Attention to the assignment of extra duties and to the over-all teacher load of the individual will pay dividends in terms of improved programs for pupils.

Quality instruction by teachers demands adequate time for preparing and planning learning activities for pupils. Creative teaching on the part of the teacher means that the teacher must examine a variety of teaching resources. Fostering genuine interest on the part of pupils in learning in a particular field and challenging pupils toward optimal development mean that the teacher must continually work toward professional growth on her own part. The problem of teacher load and assignment of extra duties, indeed, is an important problem for the nation.

Education's Weakest Area

FREDERICK J. GIBSON

EDUCATION at the present time is well within its most critical stage. The advent of the rocketry men have seen to that. Prior to this coming of the rocket age, educators over the breadth of the country sang their lament attempting to awaken the citizenry of the country to their needs. It was not until the first count down that education fell prey to the serious gaze of outsiders. Everybody sang the chorus of more math, more science, teachers, more money, more everything. More of anything was supposed to be the panacea of educational ills according to the columnist, the pipefitter, the politician, the storekeeper, the salesman, and even Phyllis Q. Housewife and Mother.

Well now, those engaged in the field of education knew what was going on for many years. They did not need Sputnik or Russia's claim to superiority to start clamoring. All of this was climatic.

However, there is one need in this field that falls right in the lap of administrators from principal up. That little thing that will do more than anything in furthering the education of our youth, and even more so—calm a clamoring public. This evasive little quality is called *intestinal fortitude*.

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It is not needed to further the curriculum, the assembly program or the ordering of supplies. It is needed to *get rid of those teachers and administrators who are no good for education.* There, I have said it. I am now the bane of all administrators and the champion of all mothers and fathers who have suffered their children in association with the above named bad category.

Experience has proved that in cases where problems have arisen over poor teaching or bad administration, the can of whitewash has been abundantly spilled. After all, you cannot blemish the name of the school or the higher ups, so whitewash, fellows, whitewash. This is a common practice that is abominable, dishonest, and most unethical.

Why does a person who is unfit to teach or rule have to be tolerated? Why do the laws legislated to protect become the laws that prevent honest service to a public and to children who must have the best if we are to hold our place in the world?

It is impossible to measure the damage accomplished by one teacher who is not discharging his duties to the best of his capabilities. You know him, for he may be in your school. He is a poor disciplinarian, a poor keeper of records, a test dumper, a newspaper reader in class, a no mark in the rank book teacher, a picker, a person too in a hurry to get to his outside job to assist a beseeching student.

Administrators, also, fall into this category. They, above all, are to be leaders; yet they are allowed to fall into stagnant waste without any force calling them to account. They render no new ideas, no innovations in their school to meet the needs of the students, they have no or little relations with the community, just their office and the list of reports that must be submitted monthly.

What Can Be Done

Now criticism can be accepted by people if the person offering the criticism can also propose something of a constructive nature in relation to the problem, so here are a few of the writer's thoughts on the subject.

There must be a rebirth of justice in the hearts of administrators. They must take the necessary steps to eliminate the unqualified teacher even if it means facing the loaded barrels of certain committee members or certain members of the hierarchy of the city. Certainly it is not asking too much to face up to a responsibility, especially when this responsibility is directly related to the training of youth.

No question here—you either hide your blotter or stand on principle. Whichever you choose will indicate whether you are the well known man or mouse, whether you are an educational administrator or a political puppet. Certain decisions in life are difficult for administrators, but he still shaves in the morning and he had better like what he sees in the mirror or choose not to look at all. To fail to act in a situation involving poor teaching simply means that the administrator is contributing to poor morale and poor programs and especially to his own eventual demise.

Another thought that should grow, but just cannot get enough sunlight, deals with the selection of teachers. Why, in most cases throughout the country, is it the committee who selects the teachers for a school? Why, in all cases, does not the superintendent be responsible for selecting teachers? Why, in all cases, does not the head of department have a say in who will function in his program? It appears too basic to be ignored that superintendents and heads of departments should work together on the final selection, with the committee's being nothing more than a confirming board. Let the superintendent—the man employed to run your system—run your system, assisted by the school committee, but not dictated to by this same committee. Let the committee be a check valve against malfunction. And whenever the committee promotes organized confusion and buck passing, let the parents exercise their inalienable right at the ballot box.

Perhaps there is too much of an idealistic tinge to these thoughts. But, we can look around us and watch big business in operation. Where in our country today does big business (and schools should be considered big business) tolerate the misfit and the unqualified? Nothing is more important than our students. As America's greatest resource, they deserve attention; they deserve the best to lead them. How can we give them any less than they deserve and say we are doing the job? Take the cue from big business, when the job is not being done, replace the individual. This we owe to the principles under which we serve, and this is what administrators are being paid to do. Why don't they do it?

Administrators who tolerate such situations in their schools are short changing the student and our country. It is high time they gave serious consideration to the protection of the reputation of the good, dedicated, loyal, and deserving teacher. It is high time they eliminated, by positive action, the waste in their system. It is high time that they put away their cans of whitewash and manifested the quality of justice and equality.

As for administrators who do not measure up to their job, then it remains for the superintendent of schools to take the necessary steps to eliminate and replace in order to keep the school system running at peak efficiency.

The writer has collected information through travel and correspondence and through actual experience to conclude that much is said and written about poor teachers and poor administrators. However, the usual corrective measure is to insist that these people should recognize their own inabilities and, for the good of the field, leave their positions. The contention here is that the elimination of these people should not be on a voluntary basis, but rather that those in authority to do so, should act positively in a direction to eliminate them by the authority vested in their position. If any reader is the type that has been acting favorably on this, then much credit is due him for his contribution to American education. But—if he is the other weak brother type, then the school can well do without him, for he will only contribute to its inefficiency and eventual decline.

Creativity and Academic Excellence—Incompatible?

JOSEPH LEESE

IN THE years since World War II, concern over the gifted has grown. Research on their nature and numbers has reached new proportions. Much more is now known of their school experiences, their attendance upon college, and their success in life. A great amount of thought has gone into procedures and devices to speed them through high school. There are numerous ideas for increasing the challenge of tasks, for raising standards and achievement levels, and for general and sweeping adaptations of program. Courses have been telescoped; ability grouping has had a spirited comeback; resources and support long since needed have been generously given. Efforts to improve teaching of the fundamentals, to expand programs in mathematics and science, and to restore and extend the teaching of foreign language have brought significant curriculum changes. The standardized test and the scholarship examination of content have had a pronounced revival.

But in all of this there has been much less interest in and attention to the problems of creativity. Although the critics have also deplored inability to think, lack of novelty and imagination, and paucity in the production of ideas, there has been in fact comparably little concern for what schools must do to foster development of the creative. In the last several years there has been a little stirring about and some research in this area,[1] but it can be fairly asserted that the emphasis in the "lift the gifted boom" has been on adaptations to improve academic performance. There are few reports of any programs organized to locate and promote those with creative power.

Reasons for Neglect of Creativity

Why have we neglected creativity? Most people take pride in being creative themselves. Nearly all of us admire creativity in others. We realize that it is related to progress and improvement. We know it is vital now, in the cold war, in our advancing technological world, on our domestic scene. Yet we have passed the problem by while we have concentrated on surer teaching of the basic skills, on earlier acquisition of

[1] J. P. Guilford's survey of references to creativity in *Psychological Abstracts* in 1950 revealed that less than 2/10 of one per cent of the entries over the preceding 25 years were concerned with the topic. Since then research has accelerated and some indirect attention is being given in projects to revise content and approach in general curriculum areas (physics, mathematics, biology).

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the content of traditional subjects, and on addition of more academic study while threatening and reducing time for art, music, and drama.

Perhaps the pressure from college critics who want better grammar and more complete knowledge of manipulative mathematics skills is the cause. It may be the self doubt in teachers of their ability to teach for creativity. There may be a lack of drive in upper school children for creative opportunity. The belief that creativity is innate, God given, and not subject to education may be more tellingly widespread than we think. Or it could be that school personnel and patrons alike do not see the school as an instrument for the cultivation of creativity.

Some or all of these may be acceptable, but none seem adequate enough. We must then seek some other explanation. In behalf of an answer, then, and in anticipation of disagreement, the stand can be taken that *we have by default neglected creativity in our schools because the structure, the conditions, and the methods required for promoting and fostering growth in creative power are at heart incompatible with those conditions and arrangements commonly employed to obtain a high order of academic excellence.* Focused on getting pupils prepared to answer more quickly and correctly, like quiz kid wonders, we have been busy refining methods and techniques more consistent with producing automata than phenomena. We could say we have not actively concerned ourselves with creativity because we have either not understood it; or, understanding it, we have not really been willing to accept the adaptations needed to insure its emergence and growth.

Broad Definition of Creativity Needed

Actually it may be fair to say that our error or neglect does stem more from not knowing than from not being willing to adapt. Although creativity has been the subject of wonderment across the ages and the topic of fanciful speculations upon many occasions, it is only very recently that careful and systematic study[2] of creative people has been undertaken. As a result of this lag, we still have much less agreement than would be most helpful on what is creative and what is not, what measures it and what does not, what fosters creative behavior and what inhibits it.

For instance, we could distinguish among productivity, creativity, and ingenuity as Flanagan[3] has done. Or we could insist that it is "work that resonates with needs and values of significant others." Or we could set down such requirements that behavior, rendition, or product should have novelty, distinction, new meaning or form having social value, *etc.*

If one walks into a school and asks for examples of creative behavior, the teacher usually draws from her file several poems, drawings, examples of unique phrases, or recalls a pupil's unusual use of some familiar

[2] See Anne Rowe, *The Making of a Scientist.* New York: Dodd, Mead and Co. 1953.

[3] Calvin Taylor. *Research Conference on the Identification of Scientific Talent.* University of Utah. 1959. P. 106.

material, the development of an ingenious game, or someone's startlingly individual rendition of a part in a play. Probably this is because these illustrations are easier to keep and are more tangible.

We know, however, that creativity extends far beyond poems and pictures—to a wide range of human behavior. Many of the day-to-day reactions of children are inventive and imaginative. Problem after problem in life is solved by genuinely clever proposals and individual insights. Children are constantly creating new ways to get into games where they are not wanted, to attract attention, to get a ride to the Boy Scout meeting, to fool the teacher into believing one has read when one has not.

Being creative then does not need to mean ability to produce only great and masterful paintings, or stories, or musical scores. It can and it ought to denote ways of responding and expressing oneself that reveal penetration, individual selection, and personal manufacture and uniqueness through whatever form, dimension, or medium required. Thus, being creative should include a broad dimension of attributes, capacities, and tendencies.

Creativity Research Creates Dilemma

Guilford and his colleagues have recently identified a number of the intellective characteristics[4] of creative people through factor analysis. Other studies have explored some of the personality and motivational concomitants[5] of creative behavior (in the sciences, in the arts, and in the humanities). There now seems to be quite general agreement that the creative mind is one sensitive to problems, alert to ambiguities, capable of restructuring and reorganizing, able to foresee consequences, inclined to elaborate and extend, given to a fluency of ideas, capable of broadly diffused parallel activity, accomplished at flexible and varied response, adept at inference, mature in penetrating analysis, as well as more adequate in quite a number of other traits such as originality, fluency of association, resistance to an idea reduction, *etc.* The individual inclined to creative acts is described as devoted to autonomy, open to the irrational, more self accepting, better endowed with a sense of humor, more stable emotionally, less anxious, more complex. He is more likely to be curious, to enjoy variety, to seek mastery, to have surprising resources in energy, to be persistent, to rankle under imposition and control, and to feel commitments strongly.

The surprising and significant point about these attributes is that they are not the ones assessed on intelligence and standardized tests and they

[4] J. P. Guilford, *et al. A Factor–Analytic Study of Creative Thinking*, University of Southern California, Los Angeles, 1951.

[5] Calvin Taylor, "The Identification of Creative Scientific Talent," *Clearing-house of Studies on Higher Education*, U. S. Government Printing Office, April 1960, p. 52 ff; Lowenfeld Viktor, "The Meaning of Creativity," *Research Bulletin, Eastern Arts Association*, March 1954, (all); Lowenfeld Viktor, "Creativity and Arts Education," *School Arts*, October 1959; Mooney Ross, "Groundwork for Creative Research," *The American Psychologist*, September 1954, pp. 544-548; and Anne Rowe, *op. cit.*

are not characteristics in the main which would assure one of getting along well in school and of pleasing the teachers who dispense marks. In fact, it is obvious that the schools are hardly at all geared to these traits or set up to develop them. Rather the emphasis in the school is upon tasks that require for their efficient doing the powers of mind that are found on the traditional intelligence test. This emphasizes again what we have long known. The best validation of intelligence tests is their prediction of success in "school" work.

The tasks of the usual school program require, for the most part, what has been called convergent mental skills or attributes. The most common goal of a pupil is to learn some "correct" fact or way of doing imposed on him by the teacher. There is always, or nearly always, an answer against which the learner is working. The emphasis is on exactness, specification, certainty, "is-ness" not "could-ness." There are few alternatives, often no two or more adequate responses. It is seldom "the way you look at it." There are not several responses to 6 plus 6. In fact, it is obvious the arithmetic test and the intelligence test on the whole demand the same things—reproduction and reiteration, not novelty, imagination, or adventure.

In order to do well the work of the school, the pupil has to be long on memory for specific responses and short on speculation and manufacture. If he follows directions explicitly, traces over the forms and patterns, grammatical or historical, well, he can get early reward. The quicker and more immediate his answer, the more likely he can escape sooner from the flash cards and at the same time get a good mark. Also, neatness, tidiness, and precise submission to external controls are high on the premium list.

It is little wonder, that several recent studies[6] have dramatically demonstrated that about 70 per cent of those who score high on intelligence tests do not score high on tests of creativity. Intelligence tests and high-school marks being well correlated, the school has reinforced (innate powers, if you wish) or simply taught or developed the mental skills and the personality traits that are convergent. It has indeed made learners excellent response agents to limited stimuli and busied itself with but few of the over fifty intellective traits now identified. Itemized subject matter set out in advance, drill, regimented class activity, preparation for tests and for one answer, slavish following of teacher plans and patterns have been the environment—geared, despite ambitions to the contrary, to an accumulative, in-taking, reproducing process. Excitement about and widespread support for the teaching machine and "programmed" learning simply and vividly *reinforce* this point. Great numbers of teachers and anxious business men alike see education more as a parroting matter than anything else.

[6] Torrance, E. P., *Explorations in Creative Thinking in the Early School Years*, Bureau of Educational Research, University of Minnesota, 1959; Getzels, J. W. and P. W. Jackson, "The Highly Creative and The Highly Intelligent Adolescent," in *Research Conference on the Identification of Creative Scientific Talent*, Calvin Taylor (ed.), University of Utah, 1959, p. 46.

Revision in Methods Required

What is necessary then to promote and develop creativity? Some small beginnings have been made here, but there is little to report that is well defined. In fact, there is every sign that it will be some time before there becomes available a volume of the kind of "how we did its" that teachers need as encouragement to strike out on their own. It appears clear now, however, that what is required is the fashioning of activities and the reorganization of school programs and approaches that will seek directly to employ and then permit, to be fully used, the dimensions of the mind now largely ignored in schools.

Before some suggestions are made here, however, it may be appropriate to pause for a moment over whether people are born creative or develop their powers to act creatively. It certainly can be said that no one knows for sure, but it is apparent we have too long stood in awe of creativity and romanticized it because we have equated it with great works of art, symphonies, and inventions. Actually any response of the human organism is created. The creation may have to follow a form or fit a pattern or standard and thus become in effect mimicry, but no one can deny that the organism has some command, if not all command, over the process.

Creative Habit Develops

The crux point, of course, is that most people learn early and practice ever thereafter finding out what is wanted and required by those outside who set the conditions, make the judgments about what is right and wrong, and administer the rewards. (What most people learn and practice are the skills and tools that lead to the "right" answer.) To find different answers and to contend with the rules and the rule makers is at best a risky business and at worst a hopeless undertaking. Yet some by nature or because of early independent training are insistent on freedom to consider alternatives. They overcome the *status quo*, reject the go-no-go gauges of their elders, and respond to the stimuli from outside and inside in unique and distinctive and divergent ways.

This would suggest that creativity might be more a matter of courage than anything else. Obviously such is not the case, but it is well documented that creative people are not afraid of risks, and interestingly the recent carefully planned studies of creative people show them to have a higher risk component in the personality than do the non-creative.

What creative people do is to take the world around them and inside them, relate and restructure, and translate what they get from their sensations into fresh form and expression.

To be sure, some people are born with greater sensitivity than others. Through their eyes, their ears, their skin surfaces and the other sense receptors, they sample more richly and get better feedback which may arouse more feeling and magnify and sharpen the desire to reply and react. At the same time, it should be pointed out that each of our senses

can be trained. Few people appear to have achieved the optimum from all their sense receptors, often because to sample freely and fully with them has been considered improper if not downright hedonic. Similarly, the divergent thinking abilities which have thus far been identified have not been called out and approved for use. When they are, they should in time become as much habit as those restricting and convergent attributes now so much exercised. Free to redefine and restructure, to maintain fluidity and flexibility, to speculate and hypothesize, to generate and experiment, to perceive differently and analyze, to elaborate and infer, to diffuse and relate, there is every reason to expect that the human organism will choose so to function.

Safety Is Imperative

The first order of business in school obviously is to make it possible for the pupil to be reasonably free to explore, to imagine, to choose, to try out on his own. In addition, it seems necessary that a reasonable amount of safety[7], psychologically, be guaranteed. Although the creatively inclined will, as pointed out, take some risks to maintain their integrity and to express their individuality, on the whole they will not pay too great a price. There is a certain amount of anxiety anyway in being separated and different. When one must carry the additional burden of disapproval or of possible retaliation, we can hardly expect that venturing and experimenting will be pursued often or fully. Therefore, permission to act independently and warm support for leading out should be built into any situation where creative behavior is desired.

Note in this respect how often the school atmosphere represents a violation of these fundamentals of freedom and safety. Despite our talk about democracy and the rights of pupils, the teacher is usually an unyielding arbiter of what should be done, when it should be done, and how it should be done. And in nearly all cases, she decides if it is done properly and satisfactorily. Even after years of the promotion of modern methods, the student only occasionally is permitted to determine the nature, the extent, or adequacy of his own project. Constantly he is under pressure to do what is assigned, standard and minimum, or else! Even when a pupil is required to write a story, paint a picture, or act out a part, he is marked against some teacher idea of what is good, correct, and acceptable.

Self-Direction and Independence Are Important

Moreover, it is hardly ever possible for the pupil to get free of competition. His efforts must constantly be compared to someone else's. He must even undergo teacher organized judgment of his peers, despite the fact that the creator is not primarily interested in what others think, but rather in what feedback he gets from his own projection.

[7] See Carl Rogers, "Toward a Theory of Creativity" in *The Conference on Creativity*, Ohio State University, 1953, edited by Manuel Barkan and Ross Mooney for a penetrating analysis of relationship of safety and freedom to creativity.

In addition, the free flow of action and feeling, the unconventionality, the pronounced individuality, sometimes bordering on the odd, that so often accompany or are a part of the tendency to respond creatively are generally frowned on in the school. One is seldom permitted by the teacher, and far less often has peer approval, to express contrary opinions vigorously, to espouse exciting causes, to concentrate on aesthetical media, and to break out of cultural stereotypes. There isn't time, or public opinion would be unfavorable, or boys do not do things like that!

What are the alternatives to these restrictions and threats and others like them that structure experience, impose regimen, diminish the perceptual field, foster reproduction and reiteration, and hamper the generative and inventive processes?

Exploration and Adventure Need Guarantees

At the outset, it must be agreed that the school program will need to continue to provide for experiences that build in automatic and correct answers. Yet, somehow we must balance this with much opportunity for pupils to explore fully without fear of reprisal, to play around with ideas, to project themselves and their feelings through varied media. Our pupils should develop their sensitivities with rich and rewarding color, taste, and form. They should speculate on and work out their own answers to problems they have discovered themselves. When they make their own choices on tasks, they should be free to evaluate their individual and personal adequacy in the face of those self-selected undertakings. Obviously then we must intercept the apparently widespread reinstitution of a tightly organized school day and the present appetite to replace music, art, and drama with "content" subjects. We must beat back the groundswell to put the teacher back in the autocrat's chair. We can not stand by while the standardized test is re-invoked to demark progress, and other regressive trends take hold.

On the contrary we must seek to extend our democratic classroom operation and to insist on teacher and class freedom to select experiences. We must protect the appropriate length unit that permits individual exploration, research, and production while we focus on problem solution and values development. And we must work hard to create settings calling for ideas, proposals, hunches, and unique expression.

Teacher Imagination Is Critical

Now in contrast to unfortunate trends, we need teachers who enjoy pantomime, who can get their learning activities from penetrating observations on trips and excursions, and who can use the seasons and incidental events to sharpen senses and build feelings. We must seek those who can postpone the details of form until the flow of expression is full and the urge to externalize has reached a peak. We must protect teachers who can live with the variety and multiple interest and the unfinished and not so tidy business out of which more often than not creativity has been known to spring. As it is in loose and rich soil and in a warm and

inviting atmosphere that plants grow, it is in a school where there are open spaces and encouraging stimulants that students freely give of and extend themselves.

Is it then inevitable that a school must focus on one or the other—cultivate creativity or advance academic aptitude? Obviously not. But it is clear that the historical approach to academic excellence, now being so widely re-instituted, is inimicable to fostering growth in creative behavior. Somehow the schools must throw off the yoke of restriction, regimen, and review—the three R tedium without spirit or stimulus.

Both New and Old Reforms Are Worthy

The efforts to reorganize the basic subjects,[8] to establish for them a teaching procedure which emphasizes, if not depends on, *discovery* have much to offer. Continued efforts to break down subject lines, to extend the school day, and to liberalize time and schedule requirements may help. Increased employment of projects, of independent study opportunities, and of "big ideas and concepts" themes may in time replace excessive fact accumulation and detail recitation. Objective consideration, revival, and balanced application of a variety of excellent techniques like those used in the thirty schools experiment[9] should help bridge the gap.

Academic excellence and creative behavior are not by any means incompatible. But creativity will not thrive in an atmosphere dulled by drill and drudgery and bedevilled by multitudes of correct answers on merit and scholarship tests. The Progressive Education Association Study[10] showed us that academic scholarship and college preparation did not suffer when the emphasis in schools was on "releasing the individual."

Our mandate seems simple enough. We must not yield any further to the forces of reaction in methods, but strive to extend everywhere in our schools, as basic patterns, those approaches which guarantee freedom and safety to question, to experiment, and to adventure. From this environment will come both creative behavior and scholarship.

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[8] See the curriculum revision projects in mathematics at Yale and Maryland, the biological sciences study at Colorado, the physical sciences study at M.I.T., and the reorganization of approach to chemistry being supported by the American Chemical Society.

[9] H. H. Giles, S. P. McCutcheon, and A. N. Zechiel. *Exploring the Curriculum*. New York: Harper. 1942.

[10] Dean Chamberlin, *et al.*, *Did They Succeed in College*. New York: Harper. 1943.

Contemporary History—A Contradiction

WILLIAM JOHN FITZPATRICK

PERHAPS, a more logical name than contemporary history might be found for a course in contemporary world affairs. The secondary-school curriculum in the United States has been restricted for many decades with one course in world history. In order to teach all the economic, social, political, geographic, *etc.* facts from the beginning of time to the present day, requires the presence in the secondary-school classroom of a most ingenious, talented, and all-knowing instructor. With so many states of the world engaged in an ideological and military struggle for freedom and power, all citizens need to make a greater study in depth of the nature and development of other nations. A proposed course, which investigates the basis of current world problems, might be entitled contemporary history, contemporary social studies, or comparative history.

Participation in world-wide activities has now become an everyday affair with news reports from Japan, Cuba, and the Congo; with the increasing mobility of peoples on overseas vacation and economic missions. At the time of national elections, candidates seek votes on their pronouncements and judgments with respect to foreign policy. Proper citizenship education in our secondary schools should demand a familiarity with world problems. These problems involve an awareness of the situation and the ability to relate it to recent developments in that geographical area. A course in the secondary school would concentrate on the events which have taken place during the last decade. To attempt any more would again make the course too superficial.

The materials available for the secondary-school teacher of contemporary world problems include international news service information, current world report magazines, special school world news journals, monographs, research studies of national and international agencies (private and governmental), affiliate offices of the United Nations Organization, foreign state offices, lecturers, interviews, and audio-visual aids.

Utilizing an inductive technique, so popular in American schools, the "problem" will stimulate the necessary interest to carry the study forward in "depth." The ultimate result will be a broader understanding of the world by a more enlightened educated citizenry. History is "contemporary" and comparative when it is focused on world affairs during the period of the last decade.

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To Rent or To Buy Educational Motion Pictures?

GENE FARIS

SINCE the advent of the 16mm educational sound motion picture in 1928, this instructional tool has assumed an increasingly important role in the educational programs of countries throughout the world. In the United States two events in particular, World War II and the National Defense Education Act of 1958, have provided the major impetus for the expanded use of this medium.

Today in our country over 25,000 educational sound motion pictures are available for use by classroom teachers at all echelons of our educational system. More and more of our teachers are recognizing the benefits derived by both themselves and students from the use of educational films and are, therefore, demanding that these materials be made available for their use. Although many excellent "free" educational films can be secured by paying the return postage to the vendor, the majority of the materials available must be purchased outright or rented for a short period of time. If school officials are to provide classroom teachers with these valuable instructional materials, a decision must be made concerning the method to be used in securing the films. A dichotomous situation usually develops when administrators reflect upon this problem —should we rent or purchase educational motion pictures?

Many school officials would probably welcome a formula whereby they could easily determine whether it would be more feasible for their school to rent films or to purchase them. Unfortunately no such scientific formula has been conceptualized and possibly never will be. There are, however, certain considerations that should be kept in mind as one ponders the question at hand. It is the writer's intent in this article to pinpoint some of the more important concerns to keep in mind as one attempts to resolve the "rent *versus* purchase" dilemma.

Classroom Utilization of Films

Dr. J. Lloyd Trump[1] in his publication, *Images of the Future*, emphasizes that a democracy demands of its education both quantity and quality. He states that "the challenge of quantity has largely been met, but the challenge of quality is now more difficult to meet than ever." If we are to have quality education, educators must create a learning environment within our schools conducive to such a program. To do this,

[1] Trump, J. Lloyd, *Images of the Future*, N.A.S.S.P., N.E.A., 1959.

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one requirement seems to be that teachers be provided with a variety of instructional material when and where they are needed. Unfortunately in many school situations, it is extremely difficult for classroom teachers to utilize various instructional materials most effectively because they are not available at the time needed. Quality education demands that this situation be corrected. The common practice of requiring teachers to order instructional materials, especially motion pictures, a year in advance of their anticipated use date must come under scrutiny as one moves toward quality education. Few would disagree that it is difficult, to say the least, for any teacher to know a year in advance when he can best integrate a motion picture into his program. Therefore, one of the very important considerations when trying to decide whether to rent or purchase films is, "Can the motion pictures be provided at the right place and at the right time to afford teachers maximum opportunity for effective integration of such materials?"

Many people would agree that having motion pictures at the right place at the right time does not necessarily assure effective utilization of such materials. Effective integration demands that teachers be well informed concerning proper procedures to follow in utilizing films and that they have information readily available about the film content. Can films be secured far enough in advance of the use date to permit teachers to preview them? If not, are supplementary materials, such as film guides, accessible? These are additional considerations that should influence one's decision concerning the method to use in providing motion pictures for teachers interested in quality education.

Cost of the Film

Which is more expensive—renting or purchasing educational motion pictures? This question would undoubtedly be considered by any school board or school administrator when analyzing the cost of instructional materials. There are many factors to consider under the heading of cost.

Whether renting or purchasing it would be necessary to determine the approximate number of film titles and prints per title necessary to meet the curricular needs of a particular school. The Indiana State Department of Public Instruction Bulletin, *The Audio-Visual Program*,[2] suggests that teachers of a twelve-grade school system should have access to 350 titles for the first eight grades and 300 titles for the four high-school grades, making a total of 650 titles. Assuming some multiple use of the titles, a twelve-year school system would probably need a minimum of 500 titles. The number of prints per title required, if establishing a local film library, would be dictated by such factors as: number of teachers, concentration of requests at a particular time of the year (*i.e.*, seasonal films or age of discovery films which are used by all teachers at approximately the same time during the school year), adequacy of the distribu-

[2] Indiana State Department of Public Instruction, *The Audio-Visual Program*, I.S.D.P.I., p. 117, 1956.

tion and inspection systems established, frequency of film damage, and availability of funds to purchase additional prints as needs arise.

Due to this multitude of factors, it is extremely difficult to determine an average number of prints per title required to meet the curricular needs of a school system. However, it seems reasonable to assume that at least two prints per title would be required in most situations. Utilizing the suggested figures of 500 minimum titles and two prints per title, one can arrive at some rough estimate of cost whether renting or buying.

Assuming the creation of a one-reel black-and-white collection, at a cost of $60 per print, it would require an initial outlay of $60,000 for 1,000 prints. Of course the purchase of color or two and three reel subjects would increase this initial outlay. To rent the equivalent number of prints for a one week period would cost approximately $2,500. (This figure is based on a rate of $2.50 per one reel black-and-white subject.) In most school systems, multiple use of rented prints will require rental for a period in excess of one week or a re-rental later in the year. This requirement will necessarily increase the rental rate. A two-week booking period would increase the rental cost to approximately $4,000 per year. This is based on six tenths of the original rental rate for the additional school week. If an average of three separate bookings per print was required during the year then the rental fee would go to $7,500.

To make the above figures meaningful, it is first necessary to determine the number of years a school can expect to keep a print in circulation. If one assumes a print can be kept in circulation for ten years, which is about the absolute maximum to be expected, then a comparison of rental *vs.* purchase cost can be made for conditions as they exist in a particular school. It is very important to recognize that the comparison suggested concerns rental costs *vs. original* purchase price of the prints only.

Frequently one stops at this point when considering the cost of establishing and maintaining a film library. Such an oversight could create financial chaos for potential film librarians. For effective classroom utilization of materials an adequate service organization must be created. Maintaining such an organization can be rather expensive. Some of the service functions that must be attended to, whether one is administering a film rental library or a locally owned one, are: accessioning, booking, confirming, pulling, packaging, shipping, recording return, inspecting, racking, repairing (purchasing replacement footage), selecting, cataloging, and supervising. Analyses have been made pertaining to the cost of these functions in various types of operations, but it is difficult to generalize from the results.

To provide some information about the cost of the above mentioned operations, it might be of value to look at the service cost on materials handled at the Indiana University Film Library where we feel an adequate job is performed in each of these areas. The latest analysis of our operation indicates that service costs amount to approximately $1.00 per

reel shipped. This figure can vary considerably depending upon the extent to which each service function is practiced. It is quite possible that this figure could be no higher than twenty-five cents per reel in some situations, but whether the handling cost in a particular library is smaller or larger than that mentioned above, the figure should emphasize the importance of not overlooking this cost factor when consideration is given to the birth of a film library.

Deterioration of Films

Another important factor to be considered in the operation of a film library is that of deterioration. What is the life expectance of a film? Although this item is closely related to costs it seems to warrant separate consideration. In a study made by Dencil Rich, supervisor of the shipping and inspection area of the Indiana University Film Library, he found that Indiana University can expect a black-and-white film to stay in circulation approximately eleven years before it dies of old age. Color films have a somewhat shorter life span, about eight years. It should be noted that the films included in this study were ones removed from circulation due to normal wear and tear only. One variable that might have prolonged the life of the films studied by Mr. Rich was the storage facilities at Indiana University. Films not in circulation were stored in a concrete vault where the temperature and humidity could be controlled to a certain extent, which from all reports available, seem to be very important factors in preserving film footage.

On the basis of the information available from Indiana University's operations, it would seem reasonable to assume that one would have to amortize a film within an average of nine and one-half to ten years when only normal wear and tear are considered. Additional factors such as film damage and loss of films, which occur through negligence on the part of some users, will probably reduce the life span of films by a year or two.

Obsolescence of Films

John McPartland writing for *Harper's Magazine* about a formula for measuring the expanding body of knowledge today says: "The formula is the same as that for the surface of an expanding sphere; human knowledge is increasing as the square of the radial increase. We are acquiring as much new information each two years as we acquired in the total of human history up to now; within five years that two-year span will have decreased to one year; within ten years it will have diminished to three months."[3]

Accurate or not, this statement points to the expanding body of new knowledge confronting educators today. This situation in itself is an important consideration when purchasing films. How many titles pur-

[3] McPartland, John; "No Go, Space Cadet," *Harper's Magazine*, Vol. 204, p. 66, May 1952.

chased will be unusable within a short period of time due to obsolescence? An answer can not be provided for this question, but the problem posed must be taken into account when attempting to determine the feasibility of purchasing a particular film. Although many film producers give special rates on new prints when the content has to be revised, obsolescence can still cause many headaches for film librarians.

Facilities for Films

Facilities must be provided for the operation of the film distribution center. In many smaller situations, this might be the audio-visual director's office or the principal's office; however, if an adequate number of titles and sufficient prints of each title are provided for school use, it is doubtful if such quarters would meet the demands of the situation. Regardless of where the operational functions of providing film services are situated, a school administrator must face the fact that the location has to have four walls and a roof which demands the expenditure of school funds.

In Summary

The writer has raised many problems and provided few answers; however, it is hoped that the considerations mentioned herein will provide some guideposts to assist individuals who have to make the big decision, "Do we rent or buy?"

Improving Assembly Programs

RICHARD L. LOUGHLIN

Purpose: To minimize the disadvantages and to enhance the positive educational values of assembly programs.

Disadvantages of Assembly Programs

1. Disruption of school routine
2. Loss of regular instructional time
3. Creation of additional hazards to safety and health
   a. Crowded staircases, halls, and auditorium
   b. Panic potential increased in case of fire or emergency
   c. Respiratory infections spread in crowded, cold, or overheated areas

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4. Tendency to degenerate into passive entertainment
5. Creation of situations inviting unfavorable "mob psychology" reactions
   a. Poor audience attitude ("lunatic fringe") or poorly planned programs may result in disciplinary problems
   b. Difficulty in detecting troublemakers in crowded and darkened auditoriums during films, plays, and illustrated talks
   c. Discourtesy to performers or speakers
6. Danger of becoming the "lengthened shadow of one man" (undemocratic, slanted, monotonous)
7. Allotment of time to co-ordinator and assistants burdens other teachers
8. Possibility of becoming a "sounding board or advertising bureau for individuals, pressure groups, or projects"
9. Temptation to adopt an unsound show-must-go-on attitude

Advantages of Assembly Programs

1. Training for democratic citizenship (cooperation and respect for others)
2. Development of school spirit by identification with group and by pride in presentations (sports awards, speech arts, honor society)
3. Economical way of offering experiences and information of an educational and cultural nature (music, drama, forums, distinguished guests, films, and dances)
4. Guidance and orientation not feasible in bulletins, home-room lessons, or individual conferences (large group appeals and points of special emphasis, vocational and educational opportunities)
5. Presentation of pleasant and profitable leisure time pursuits (recreation, hobbies, development of artistic abilities and of skills)
6. Demonstration and supplementation of the work of classes, clubs, activities, and of services within the school (showcase of the school)
7. Motivation to achievement in desirable activities
8. Leadership training (pupil chairmen, monitors, color guard, orchestral conductor, glee club conductor, projectionist, technicians)
9. Opportunity for growth in accuracy and in ease of expression
10. Contribution toward the solution of some school problem
11. To meet those needs of the community that devolve upon the school
12. Development of school traditions based on educational ideals
13. Cultivation of good manners and discriminating value judgments
14. Satisfaction of wholesome needs of pupils, by the students, for the good of the school, the community, and the nation.
15. Support for school organizations (student organizations, teams, clubs, and squads)

A Desirable Assembly Organization

1. Assembly co-ordinator ("social engineer" with broad background, outside contacts, organizational ability, and a flair for public relations)
   a. He should receive a time allowance
   b. He should submit a tentative schedule for approval
2. Assembly committee
   a. Headed by the assembly coordinator
   b. Composed of representatives of a cross-section of the school
      (1) Draw up assembly schedule for entire year
      (2) Insure a well-rounded, varied, school-keyed, and carefully planned and prepared series of programs
      (3) Offer suggestions, cooperation, and serve as liaison officers
         a. Canvass the school for ideas, talent, and abilities
         b. Provide monitors, color guard, technicians, and "star" pupils
      (4) Provide scripts, songs, dances, properties, and services
      (5) Evaluate past offerings and recommend improvements
      (6) Assist in publicizing the assembly offerings
      (7) Send press releases to local newspapers and school-page editors (community contact)
3. Speech arts classes
   a. Platform arts (public speaking: assembly chairmen, forum panelists)
   b. Production drama (plays: regular and honor assemblies)
      (1) All groups may submit scripts and "star" pupils
      (2) Production prepared in speech arts class, under supervision of trained speech personnel
4. Approved assembly procedures (mimeographed copy to every teacher and pupil leader)
   a. Entrances and exits, including staircases to be used
   b. Seating plan
   c. Program for the year
   d. Special assignments and responsibilities
   e. Order of business.

NSF Summer Institutes for Science Teachers: The Principal's View

ALWIN PARKER
SAM ADAMS

THE various National Science Foundation activities in the area of science teaching have met with mixed feelings on the part of principals. One principal recently described this situation: In his school he had two excellent science teachers. For the year 1959-60, one of them was attending an academic-year institute and the other was serving as a traveling science teacher. Qualified replacements were not available on a one-year basis. His comment: "This is improving science teaching?"

However, the summer institutes for science teachers, scheduled during a non-teaching period, have not created such problems and have been welcomed by many principals. In a recently completed study, the authors investigated the reactions of principals who have had one or more teachers participate in such institutes. The basic question was: "Does attendance at an institute have any effect on what goes on in the classroom?" The principals are uniquely qualified to give answers to this question.

Procedure

In the 1957-1959 period, the colleges and universities of Louisiana conducted eight NSF-sponsored summer institutes for science teachers. A total of 395 teachers attended these institutes. These teachers were supervised by 375 principals. All of the latter group received questionnaires as part of this study. The questionnaires were completed and returned by 137 (37 per cent) of the principals. The results shown below are based upon these 137 responses.

Evaluation of Program

To the question, "In your opinion, is this individual a better teacher because of participation in the NSF institute?" 130 said "Yes" and six said "No." The most frequently cited explanations were: (1) greater knowledge of subject matter, (2) more interest and enthusiasm, (3) greater self-confidence, and (4) more awareness of recent trends.

A great majority of the principals indicated that the participating teachers had made considerable improvement in the equipment phase of teaching. Many of the teachers, after institute attendance, made more effective use of commercial equipment, while others showed increased proficiency in the construction and use of improvised apparatus.

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The question, "To what extent has attendance at the institute increased career interest in science among this teacher's pupils?" drew a variety of responses. However, 92 indicated that such interest had increased, while 20 reported no change. The chief reason cited was that the teacher's classes were more interesting.

The principals were asked to give the reactions of teachers to the idea of using Federal funds for the training of teachers in certain selected areas. Generally, science teachers were described as giving strong approval to the present system. High-school non-science and elementary-school teachers were listed as being predominantly in favor of the present program with the stipulation that other academic areas be included.

The principals indicated that, after institute attendance, participants became somewhat more active in science clubs and science fairs. Also, a considerable increase was noted in the use of demonstrations and research or creative work for students. A majority of those responding indicated greater pupil demand for the teacher's classes after institute attendance.

Over-all, the principals indicated approval of the summer institute programs, their chief reason being that it gave science teachers an opportunity to improve subject matter background. The two most commonly cited suggestions for improvement were: (1) Institutes should be available for teachers in other subject areas (including principals, incidentally), and (2) institute courses need to stress more practical teaching experiences.

So, despite the fact that some NSF activities have resulted in personnel problems for school administrators, the principals who participated in this study indicated that participation in summer science institutes had definitely improved the classroom performance of their teachers.

The Book Column

Professional Books

BUCHHEIMER, ARNOLD, and S. C. BALOGH. *The Counseling Relationship: A Casebook.* Chicago 11: Science Research Associates, Inc., 259 East Erie Street. 1961. 250 pp. The book is not intended to be a self-contained text in counseling techniques. It is meant to be read in conjunction with books by Brammer and Shostrom, Erickson, Pepinsky and Pepinsky, Porter, Robinson, Rogers, Snyder, and Tyler.

Interviews used as illustrative case materials were all conducted by graduate students in a laboratory practicum in school counseling. All of the students were experienced teachers—both men and women—who were preparing to be counselors. To preserve their anonymity, the generic *he* is used throughout the book whenever the counselor is discussed.

Chapter 1 contains a discussion of what the authors feel to be the questions most commonly asked by counselor trainees when they begin to counsel. Chapter 2 undertakes a thorough analysis of the relationship between counselor and counselee as it evolves through different phases of an interview. Chapter 3 deals with a way of inferring a self-concept from initial interviews, and the use of this inferred self-concept by the counselor to formulate counseling goals and make plans for short-term counseling. Chapter 4 presents a theoretical frame work that the counselor can use as a guide. Chapter 5 contains exercises for the counselor to work out for himself.

CONANT, JAMES B. *Slums and Suburbs: A Commentary on Schools in Metropolitan Areas.* New York 36: McGraw-Hill Book Company, Inc., 330 West 42 Street. 1961. 150 pp. $1.95. Dr. Conant's latest book stemming from his studies of American public education financed by the Carnegie Corporation of New York contrasts the schools in the wealthy suburbs and the slums of the large cities. It complements his earlier *American High School Today*, which dealt primarily with high schools in independent towns and cities that were not part of a large metropolitan complex.

In his new book, he points up the severe educational and employment problems facing school authorities in the big cities. In many slum neighborhoods over fifty per cent of the boys between sixteen and twenty-one are out of school and out of work. The nationwide rate of unemployment for youth is over twice the rate for all workers. Dr. Conant says that "a continuation of this situation is a menace to the social and political health of the large cities." It is necessary to improve the education of slum youth and to open up employment for them.

Citing the contrast in the money spent per pupil in the wealthy suburbs and in the slum schools, Dr. Conant states that this difference "challenges the concept of equality of opportunity in American public education." Wealthy suburban schools are now spending twice as much per pupil as big city schools. Dr. Conant says that "in view of the problems of the large cities and their importance to the national interest . . . these ratios might well be reversed." More money is needed in slum schools to compensate for the difficult tasks faced by the teachers.

He sympathetically discusses the lot of the Negro in the northern cities and in tackling the controversial question of deliberately mixing Negro and white students in those areas where housing patterns result in what amounts to segregated schools.

Whereas the problems of the education of slum children are the same irrespective of color, the problems of employment of youth are compounded by discrimination against Negroes. Dr. Conant calls for the use of Federal funds to open up employment opportunity for big city youth in order to insure nondiscriminatory practices by both management and labor. A major recommendation is that school authorities in the large cities "be given the responsibility for educational and vocational guidance of youth after they leave school until age 21" in order to bridge the gap between school and job. Dr. Conant stresses the necessity of tying school and job closely together.

A major task in the slum schools of the large cities is to "prepare a student for getting and keeping a job as soon as he leaves school." A major task in the wealthy suburban school is to "guide the parent whose college ambitions outrun his child's abilities toward a realistic picture of the kind of college his child is suited for." In the slum school a very low percentage of youth are headed toward college; in the college-oriented suburb 80 per cent or more of the students go on to college regardless of their ability.

Dr. Conant then discusses at length the suburban schools in which he says very early guidance is necessary in order to educate both parents and children in the realities of college admission.

His recommendations are very specific about what bright students ought to study in high school. Dr. Conant provides an Academic Inventory from six well-known college-oriented schools in the East and Mid-West as a check against his own recommended program and as a check for other schools. These schools are the Bronx High School of Science in New York City; Newton High School, Newton, Massachusetts; Scarsdale High School, Scarsdale, New York; Great Neck High Schools, Great Neck, L.I.; Central High School, Philadelphia; and Evanston Township High School, Evanston, Illinois. A plea is made for five academic subjects a year for bright students rather than four.

At the end of his 150-page book Dr. Conant summarizes his findings with seventeen recommendations about improving education in both slums and suburbs. The lesson to be learned from visiting and contrasting schools in these totally different kinds of neighborhoods is that "what a school should do and can do is determined by the status and ambitions of the families being served."

DOWNS, R. B. *Molders of the Modern Mind.* New York 3: Barnes and Noble, Publishing Division, 105 Fifth Avenue. 1961. 415 pp. $6, cloth; $2.25, paper. This work is an analysis of certain seminal books, since the invention of printing, which have profoundly influenced Western culture and civilization. Emphasis is placed on the sciences and social sciences, especially the biological and physical sciences, economics, political science, sociology, education, and history. The best criterion in the selection of each title was to find the pioneer and the trail-blazer, such as Vesalius on human anatomy, Harvey on blood circulation, Faraday on electricity, Dewey on modern education.

The books are arranged chronologically and divided into five periods, each of which has an explanatory note portraying the historical and cultural back-

ground of the era. These sections also highlight many important works not included in the basic list.

DURKHEIM, EMILE. *Moral Education*. New York 19: The Free Press of Glencoe, Inc., 640 Fifth Avenue. 1961. 288 pp. $6. The author analyzes the elements of morality and takes up the question of how to develop those elements in the child. He feels that the public school is best suited to the task of moral education, and that, in the process of educating the child, it must create a new being shaped according to the needs of society. Accustomed to hearing about "child-" or "individual-centered" public school training, we may complain that this theory is over-restricting. The author argues that only by imposing limits do we free the child from the frustrations of incessant striving; and only as he is involved in his cultural heritage can he achieve a sense of identity and personal fulfillment.

GWYNN, J. M. *Theory and Practice of Supervision*. New York 16: Dodd, Mead and Company, Inc., 432 Park Avenue South. 1961. 495 pp. $6.75. What is the role of the supervisor in the elementary or secondary school today? How much responsibility does the supervisor have for the formulation of school policy or the evaluation of the teaching? Does he function as an administrative official? Of what help should he be to the superintendent, the principal, or the individual teacher?

Conflicting educational theories today make it mandatory to re-examine the basic concepts and purposes of both education and supervision. In this sound and practical book Dr. Gwynn, a distinguished educator, addresses himself squarely to the fundamental problems and their many ramifications. Both the beginning aspirant and the practicing supervisor will find this book of enormous value and deserving of a place in their permanent professional literature to be studied by them and all whom they supervise.

HALL, O. A., and BEATRICE PAOLUCCI. *Teaching Home Economics*. New York 16: John Wiley and Sons, Inc., 440 Park Avenue South. 1961. 411 pp. $5.95. The author believes that it is necessary for the student to generalize what has been learned and to relate the principles of home economics education to any particular school setting. The first part develops an understanding of the role of a teacher and then describes home economics programs in various kinds of school and community homes and families of one's students, and the students themselves. This knowledge is basic for planning suitable learning experiences, which is covered in part three. Evaluation, given a prominent place in the last part of the book, serves an integrative function in relating the goals of home economics to student and teacher growth and to the physical and psychological environment of the home economics department.

While the book is directed primarily to the college student studying for this profession, it will also be of value in pre-service and in-service preparation for teachers at any level and in any subject area. Counselors, administrators, supervisors, school board members, curriculum coordinators, and community-minded citizens who are interested in the quality of education offered in their schools will find this book a helpful reference in their activities.

HALSEY, A. H.; JEAN FLOUD; and C. A. ANDERSON, editors. *Education, Economy, and Society*. New York 11: The Free Press of Glencoe, Inc., 60 Fifth Avenue. 1961. 636 pp. $7.50. In the sociology of education, great progress has been made recently. Reflecting this progress, this book presents contributions by educators, economists, and sociologists dealing with

the impact of economic and social change on educational requirements, the influence of social factors on educational achievement, and the changing social functions of teachers and institutions. The articles focus on the connection between education and the economy in the United States as well as in other industrialized countries, especially on the role that schools and universities play in selecting and training manpower.

As the editors point out in their introduction, the traditional concern of education with the process of cultural transmission "is performed in quite new terms under the conditions of technological society." No longer is it a question of handing on an unchanging body of knowledge and belief; on the contrary, education in modern societies is more concerned with changing knowledge than with conserving it. The major concern of this book, then, is with educational institutions under conditions of rapid change—a concern which necessarily involves discussion of all the important issues in educational sociology.

This book includes comparative material in addition to illustrative matter drawn from the American experience. Designed to serve as a college text in the sociology of education, it should also be of special interest to educators, sociologists, psychologists, and parents.

HODENFIELD, G. K., and T. M. STINNETT. *The Education of Teachers: Conflict and Consensus.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1961. 190 pp. $1.95, paper cover. This is the story of a historic venture in education. It is the story of three great national conferences aimed at getting the warring segments of American education to sit down together and talk sense about how our teachers should be prepared.

The history of the wrangling is long and bitter. From the founding of the first normal school in the United States in 1839, a continuing debate has persisted among educators as to the best means of educating teachers. But as long as these professional schools confined themselves to turning out teachers for the elementary schools, nobody paid much attention to them. In fact, their admission requirements and curricula were at such low levels as to be beneath the notice of the world of higher education. At the turn of this century, however, the lowly normal schools began to transform themselves into degree-granting teachers colleges. This transformation posed an obvious threat to the liberal arts colleges, the coming invasion of their heretofore exclusive domain in the field of the preparation of high-school teachers. At this point the debate grew into a sullen cold war in higher education. This war had several facets: the liberal arts college *vs.* the teachers college; the private institution *vs.* the education professors. For a half century this feuding smoldered with infrequent pot-shotting.

These conditions prompted several of the scholarly societies and professional associations to join in bringing representatives of the warring groups together in annual national conferences of the National Commission on Teacher Education and Professional Standards.

This book is the story of those three conferences—Bowling Green (1958), Kansas (1959), and San Diego (1960). It is told by G. K. Hodenfield, education writer for the Associated Press, who covered the conferences for his wire service. Its purpose is to provide a summarization of this effort as viewed by an impartial, objective observer. Included with the observation of the conferences are also a glimpse at the past, a survey of the present, and a capsule projection of things to come, in this struggle to end the family fight among educators.

HUTCHINS, C. D.; A. R. MUNSE; and E. D. BOOHER. *Federal Funds for Education, 1958-59 and 1959-60.* Washington 25, D. C.: Superintendent

of Documents. 1961. 261 pp. $1. For a period of more than 25 years, this series of publications has provided an authoritative and reasonably comprehensive source of information about Federal activities in education. This present bulletin describes educational programs supported by the Federal government and gives tabular summaries of the Federal funds provided. Compilations of amounts for the individual states in the 1958-59 and, if available, for the 1959-60 school years are presented. Summary tables reporting program amounts over a 10-year period are also included to show trends in Federal support. These figures indicate annual amounts for the separate programs; the extent that educational activities are supported in the separate Federal departments, agencies, or offices; and the government-wide participation in supporting education services throughout the United States.

MADELEVA, SISTER M. M. *Conversations with Cassandra: Who Believes in Education?* New York 11: The Macmillan Company, 60 Fifth Avenue. 1961. 133 pp. $3.50. This book raises its voice in a clarion call for teachers with "vision and daring" and for students who are willing "to prick their iridescent bubbles of security" and to follow the sound leadership of responsible teachers to new beginnings and a promising future.

MAHLER, C. A., and EDSON CALDWELL. *Group Counseling in Secondary Schools.* Chicago 11: Science Research Associates, Inc., 259 East Erie Street. 1961. 84 pp. This book, latest in the company's Professional Guidance Series, offers counselors a plan for extending and intensifying the effectiveness of school guidance and counseling services by the addition of group counseling, whereby small clusters of students can discuss and evaluate mutual problems under the expert guidance of a counselor. The authors define group counseling, explain where it belongs in the school program, and outline steps to be followed in setting up a group program and in evaluating the results. There are also chapters on skills needed by the counselor working with groups and the problems involved in getting such groups under way once a program has been decided upon.

MARGOLIN, R. J., and A. C. WILLIAMSON. *Case Conferences in Education.* Boston: Bruce Humphries, Inc. 48 Melrose Street. 1961. 115 pp. $2.50. This book presents, in language familiar to the teacher untutored in the language of psychiatry, an approach to this problem which, while not entirely new, is workable even with some variations in its application. The book realistically points out to the teacher that not every case is amenable to complete cure, that some improvement in some cases is real progress, and that there are some cases in which no discernible improvement will be obtained. The approach presented here discourages untutored diagnosis and treatment by the individual and encourages a group approach in conjunction with utilization of every available resource. It also gives the conscientious educator inspiration and reason to continue when initial efforts produce no apparent result.

Montgomery County Curriculum Study, Vol. II. Rockville, Maryland: Montgomery County Public Schools, Educational Services Center, Division of Publications. 1961 (August.) 701 pp. (8½" × 11") Multilithed. This volume is a compilation of the final report to the Montgomery County (Md.) Study Committee (a lay-citizens' advisory group appointed by the Montgomery County Board of Education) from each of the 16 Study Groups and the panel on Community and School Analysis. It is the result of the work of the Study Groups over a long period of time. Each group was composed of staff members and non-staff members on a ratio of approximately 1 to 2. Each of these 16 Study Groups was assigned a particular area to study and make a

final report to the County Committee. The 16 areas represented by the Study Groups were: New Ideas, Experimentation, and Research Related to the Curriculum; English; Foreign Language; Social Studies; Mathematics; Science; Art; Music; Health, Physical Education, and Safety; Home Economics; Business Education; Technical Education; New Studies for the Future; Curriculum Design-Elementary Education; Curriculum Design-Secondary Education; and Education Beyond the High School. Included also are a report of a Panel on Community and School Analysis and the report of statements by individual members of the County Curriculum Study Committee. This report was presented to the County Board of Education and the community for consideration and action.

This report is written in such a style that the lay citizen can readily comprehend its implications and recommendations. It is comprehensive in its coverage and provides a present as well as a future look at public education on the county basis. A summary volume (Final Report, Volume I) of 186 pages has also been published. This is composed of the County Committee's report and summary reports of the Study Groups. The key recommendations of each group are presented in a separate section.

MURPHY, GARDNER. *Freeing Intelligence Through Teaching.* New York 16: Harper and Brothers, 49 East 33rd Street. 1961. 64 pp. $2.95. Gardner Murphy, the noted psychologist, presents a spirited view of the teaching process, while analyzing the influence of John Dewey's teachings and writings upon education in this country. Education, says Dr. Murphy, "is a matter of passion," and the quest for meaning must take into account the learner's rich inner life of impulse, effect, and the unconscious. Truly effective teaching must comprehend the complementary nature of the rational and the personal and seek to bring them into fruitful relationship.

NOAR, GERTRUDE. *The Junior High School Today and Tomorrow,* second edition. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., Box 903, Department C. 1961. 416 pp. $5.95. The new edition of the analysis of the functioning junior high school serves *administrators* who are seeking ways of beginning the detailed process of modernizing their schools. It will be of value to *teachers* at various stages of development. The *beginner* who is not thoroughly familiar with classroom routines and management and who has a problem with discipline will find in this book practical suggestions that will bring constructive results. Questions raised by the academic teacher who wants to use modern methods in a traditional setting are answered. There are aids for those *experienced teachers* who are seeking new ways of working with children. The early adolescent is discussed in a complete presentation of programs and methods for teaching this intermediate pupil in the junior high school. The procedures and courses of action presented here reflect the development of actual school experiences over the last ten years.

VAN TIL, WILLIAM; G. F. VARS; and J. H. LOUNSBURY. *Modern Education for the Junior High School Years.* New York 19: The Bobbs-Merrill Company, Inc., 3 West 57th Street. 1961. 545 pp. $6.50. Comprehensive coverage is given to all aspects of the subject: history and development, psychological and philosophical foundations, teaching methodology, guidance, evaluation, extracurricular activities, *etc.* The book contains detailed descriptions of teaching the core curriculum, including content and method. Both the prospective teacher or school administrator and the experienced educator will find useful insights and much modern, practical, and valuable information pertaining to education for the junior high-school years. It will be particularly

helpful to teachers of specialized subjects since it presents specific sections dealing with science, mathematics, foreign languages, physical education, industrial arts, the fine arts, music, homemaking, and business education. There are many practical suggestions for improving teaching techniques and for gathering, organizing, and using resource materials such as outside lecturers, pamphlets, audiovisual aids, and textbooks.

VERNON, P. E. *Intelligence and Attainment Tests.* New York 16: Philosophical Library, Inc., 15 East 40th Street. 1961. 207 pp. $7.50. This book is a comprehensive survey of objective tests written in straight-forward and non-mathematical language. It includes a brief history of testing, explains and criticizes individual and group tests in general and describes most of the tests widely used in English-speaking countries. The author also discusses the nature of intelligence and its origins, both hereditary and environmental, and concludes with a chapter on the educational and vocational implications of intelligence testing. This comprehensive survey will prove invaluable to teachers training college students and all concerned whether directly or indirectly with intelligence testing and personnel selection.

————. *The Measurement of Abilities.* New York 16: Philosophical Library, Inc., 15 East 40th Street. 1961. 288 pp. $7 50. Primarily written for teachers, educators, psychologists, social workers, researchers, psychiatrists and statisticians, this book provides an elementary interpretation of the statistical techniques which are essential to a proper understanding of mental measurement and shows the application of these techniques to problems of testing and measurement. This new edition brings the book up to date in respect of election for secondary education and presents, in the light of developments in the field of intelligence theory and testing, a more reasonable picture of the relations of innate and acquired abilities and of the findings of factorial analysis than has hitherto been available. The comprehensive list of published mental tests has been completely reconstructed and several of the statistical sections have been revised and expanded.

WEISS, M. J. *Reading in the Secondary Schools.* New York 3: The Odyssey Press, Inc., 55 Fifth Avenue. 1961. 477 pp. $2.50. This book is an attempt to present the ideas teachers and professors have offered for effective programs. Part One of the book presents the over-all philosophy of reading. Reading is more than the mere mastery of skills. There are many causes for students' deficiencies in reading.

Part Two argues that reading is every teacher's job. No one person can carry the program. Parents need to understand the program and to cooperate in developing it. Part Three emphasizes the role of reading as a personal experience. It suggests ways of handling the problem of individual differences. This means pin-pointing the needs of a child and providing individual or small-group (if several children have the same interests and needs) instruction and activities.

Part Four deals with motivation through printed sources and other forms of mass media. Ways of recognizing and building on student interests are described. Parts Five and Six show ways that reading skills can be vastly improved, both generally and in specific content fields. Suggestions are given for developing critical reading. Organizing content matter around unit themes seems to be a particularly effective method of providing for the individual interests and reading levels of students.

Part Seven offers some guideposts for developing and conducting reading programs on the secondary level. Part Eight discusses ideas basic to evaluating

the effectiveness of an all-school, all-faculty reading program. A bibliography of professional publications and materials useful in a secondary-school reading program follows the chapter on evaluation.

This entire book is built on the belief that effective teaching must contribute to the development of the total student and that the teacher must therefore understand and make use of the student's existing reading patterns and patterns of general experience. Every teacher needs to start where the individual student is and, by providing the most appropriate materials and instruction, help that student to develop to his maximum potential. Through such instruction, a student may soon find that reading is a constant source of meaning and value for him.

WHITE, M. A., and M. W. HARRIS. *The School Psychologist*. New York 16: Harper and Brothers, 49 East 33rd Street. 1961. 441 pp. $6. The authors discuss methods for solving the everyday, nontechnical problems that the school psychologist uniquely encounters in his job, focusing on the people, issues, and responsibilities with which he must deal. At the same time, they give detailed attention to research and clinical studies relating to the practice of psychology.

The book analyzes socioeconomic factors which can affect the student's academic, emotional, and social functioning in the classroom, and, step by step, discusses how to evaluate a pupil's problem. It aims to help other members of the school staff to recognize the place of school psychology, indicates how to make use of psychological services, and shows how pupil personnel services can work smoothly together. The authors also explore the future possibilities of school psychology.

WOELLNER, MRS. R. C., and M. A. WOOD. *Requirements for Certification of Teachers, Counselors, Librarians, and Administrators for Elementary Schools, Secondary Schools, and Junior Colleges*. Chicago 37: The University of Chicago Press, 5750 Ellis Avenue. 1961. 140 pp. $3.50. This is the 26th annual summary of the initial certification requirements for teachers, counselors, librarians, and school administrators; for the several states, regional accrediting associations, and for the United States Possessions and Territories.

In order to adjust the professional requirements of school personnel to changing conditions, the accrediting agencies have made major and minor changes each year, in order to provide adequately prepared persons for educational positions. Whenever the supply of school personnel is short of the demand, there is a tendency for states to issue "temporary" or "substandard" certificates to those who approximate but do not fully meet the regular requirements for an initial certificate. This volume does not attempt to indicate the basis for issuing temporary or substandard certificates issued by the states. After an individual has once been admitted to the profession through an initial certificate, knowledge can be readily obtained about the advanced certificate requirements in the particular state in which such an individual is rendering professional service.

Your AASA in 1961. Washington 6, D. C.: The American Association of School Administrators, 1201 Sixteenth Street, N. W. 1961. 409 pp. $3, paper cover. This is the official report of the AASA for the year 1960-61. It includes the addresses given at the annual meeting and regional work conferences on "Education for the Challenges of Tomorrow" held in San Francisco (February 25-28, 1960); St. Louis (March 11-14, 1961); and Philadelphia (March 25-28,

1961). It also includes the resolutions, report of the Audit Committee, the report of the Board of Tellers, the Constitution and Bylaws of the association, the platform, a short history of the association, a calendar of meetings, the officers and staff during 1960-61, and an index.

Books for Teacher-Pupil Use

ADDAMS, JANE. *Twenty Years at Hull-House*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 330 pp. 75¢. Covering the years 1889 to 1909 a time when America was fired with fear of subversion and suspicion of foreigners, this book stands as the immortal testament of a woman who worked among these immigrant settlers.

ALDERMAN, C. L. *Samuel Adams, Son of Liberty*. New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1961. 199 pp. $3.50. This biography recreates the life and times of Samuel Adams, an important though unsung hero of the American Revolution.

ALY, BOWER, editor. *Government and Education, The Thirty-Fifth Discussion and Debate Manual*, library edition. Eugene, Oregon: University of Oregon, Box 5152 University Station. 1961. 444 pp. $4.05 postpaid; $5 when billed. A special library edition of this standard annual two-volume publication has been prepared to meet the demand from schools, libraries, and individuals preferring a single volume designed for permanent reference. The two parts of the Manual are bound together in a fabrikoid binding. The contents are identical with those of the two-volume edition published for the official use of the state discussion and debate leagues throughout the United States.

The book comprehends the problem area recommended to the leagues by the Committee on Discussion and Debate Materials and Interstate Cooperation for the academic year 1961-62: *What should be the role of the federal government in education?* The book has been prepared for the current discussion and debate program in the secondary schools of the United States and is recommended to schools and libraries as a source book on Federal aid to education.

The Amazing Adventures of Dennis the Mennis. New York 22: Random House, 457 Madison Avenue. 1961. 64 pp. $1.95. This book contains 7 stories describing his amazing adventures. Illustrated in color.

AMERICAN AUTOMOBILE ASSOCIATION. *Sportsmanlike Driving*. New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1961. 380 pp. (7" x 9¼"). $4.12. The fourth edition of *Sportsmanlike Driving* is a new book, completely revised and rewritten with new concepts and new illustrations. The format has also been changed. The pages are larger than they were in the third edition, and two columns of type have been used for improved readability. There are more illustrations—350 of them in all—and color is liberally used. It is designed to provide authoritative answers to the driver education problems of the 1960s. The book is divided into two parts: *Getting Ready To Drive* and *in the Car*. This organization provides convenience for use in each of the two phases of a complete driver education course—classroom instruction and practice driving.

The teaching technique implied throughout the book is unusual. Emotion-associated words are utilized to orient students to the factual material. This

technique shapes the student's attitude toward safe and sportsmanlike driving, as is most apparent in the chapter, "The Psychology of the Driver."

There is a new chapter dealing with the increasingly important subject of freeway driving, and there is also a new chapter describing how alcohol and drugs affect drivers. Many problems often encountered in teaching the effects of alcohol and drugs are simplified, since the approach is purely factual.

To help students understand how the automobile runs, a new pictorial section shows simply and clearly how the various automobile systems work. There is also emphasis on buying, insuring, and operating a car. A compact but comprehensive reference list for students is included at the end of the book, and a glossary is a new feature of this edition.

ARNTSON, H. E. *Adam Gray: Stowaway.* New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 196 pp. $2.95. It was the year 1810, and Adam Gray, apprentice, had lost his job—again. Why? Half by instinct he headed to his favorite place, the docks, to think the whole thing out. Then came a voice, "Boy! Pick up that bundle and get it aboard ship! And be quick about it!" And Adam was off on an adventure that was to take three years and carry him halfway around the world.

BALL, ZACHARY. *Salvage Diver.* New York 11: Holiday House, 8 West 13th Street. 1961. 220 pp. $2.95. Two young Seminoles and their deep-sea charter cruiser are hired by a salvage master to search for sunken ships off the Florida Keys. With the help of charts and insurance information, skin-diving equipment and an underwater Tow-Sled, they comb the reefs. When a wreck is located, the helmet divers of the commercial salvage ship take over, and the skin divers begin the search for the next wreck.

BAUDOUY, MICHAEL-AIME. *More Than Courage.* New York 17: Harcourt, Brace and World, Inc., 750 Third Avenue. 1961. 159 pp. $3.00. To Mick, the son of a wealthy and ambitious French family, anything to do with machines and mechanics meant a great deal more than conventional school studies. He was often in trouble with his father because of low grades.

BEALS, CARLETON. *Nomads and Empire Builders: Native Peoples and Cultures of South America.* Philadelphia 39: Chilton Company—Book Division, 56th and Chestnut Street. 1961. 334 pp. $7.50. At the time of the coming of the Spaniards and the Portuguese, the Incas were ruling one of the largest and most splendid realms in history, the Quechua-speaking empire, controlling hundreds of different cultures and language groups. As if to rival the majesty of the Andes, in Cuzco they had built great stone palaces and temples, lined with gold, as well as schools and fortresses. Incan paved highways, the finest then on earth, stretched fifteen feet wide for 3600 miles through the Andes from Argentina and Chile to Ecuador and Colombia, from the eastern jungles to the western coast. They built suspension bridges over 10,000-foot chasms. Their irrigation canals sometimes bored through stone mountains, bringing water to the stonefaced farm terraces which climbed the steepest heights up almost to the 15,000-foot snow line.

BECKER, BERIL. *Captain Edward L. Beach: Around the World Under Water.* Philadelphia 5: J. B. Lippincott Company, East Washington Square. 1961. 192 pp. $2.95. This is the story of the atomic submarine *Triton's* round-the-globe underwater cruise early in 1960. The book describes the preparation for the voyage, which retraced the route sailed by Magellan, and tells what it was like to live for three months under water.

BEST, HERBERT. *Bright Hunter of the Skies.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1961. 164 pp. $3.50. When fortunes

of war made him an apprentice in the mews of Emperor Frederick II, Jan found the new life harsh at first. But, as time passed, he discovered a new pride and purpose: he would become an expert falconer for Frederick. The story reaches its climax as Jan encounters the Emperor for the first time—and under surprising circumstances.

BIXBY, WILLIAM. *Havoc: The Story of Natural Disasters.* New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1961. 179 pp. $3.50. Volcanic eruptions, tidal waves, earthquakes, hurricanes, tornadoes, avalanches and floods—all the great cataclysms of nature—provide the awe-inspiring material for this exciting and carefully researched book.

BLUM, DANIEL. *Theatre World.* Philadelphia 39: Chilton Company—Book Division, 56th and Chestnut Street. 1961. 256 pp. $6.00. The author presents in more than 600 photographs the Broadway season for 1960-61. Here are the stars, the supporting players, the walk-ons, the directors, producers, scenic designers, and dancers who helped make each production successful—from the season's first hit, to the show which officially closed the season.

As in the past, *Theatre World* gives complete cast and production lists for *all* Broadway and Off-Broadway productions, the length of each run, biographies of hundreds of players, and a list of prize plays and obituaries. In addition to all this, *Theatre World* is completely indexed.

BOTHWELL, JEAN. *The Emerald Clue.* New York 17: Harcourt, Brace and World, Inc., 750 Third Avenue. 1961. 191 pp. $3.25. Exciting action and a vivid setting enhance this unusual story of modern India and of a girl's rebellion against the traditional, cloistered life imposed on Indian women for centuries.

BRADSHAW, J. H., Jr. *That Blizzard Cow!* New York 22: Hastings House, Publishers, Inc., 151 East 50th Street. 1961. 124 pp. $2.95. This is the story of a 10 year-old boy growing up on large farm of prize winning dairy cattle.

BRESSLER, MARVIN, special editor. *Meeting Health Needs by Social Action.* Lancaster, Pennsylvania: The American Academy of Political and Social Science, Prince and Lemon Streets. 1961 (September). 240 pp. $8 per year, paperbound or clothbound at $12 per year (6 issues per year). Single copy $2, clothbound $3. A symposium on health in which the following areas are discussed: the dimensions of the problem, the structure of medical services, some social mechanisms for meeting health needs, the special problems of low-income groups and the aged, and anticipating the health needs of Americans.

BULLA, C. R. *Down the Mississippi.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 80 pp. 25¢. This is the story of a river boy as a cook's assistant who encountered storms, Indian raids, and endless work on the Mississippi.

BURNS, W. A. *Exploring for Fun.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1961. 128 pp. $3. The author gives detailed information as to the kind of equipment to take; how to pack it; the clothing to wear; how to make a fire; and how to set up camp. There is an excellent chapter on direction finding and map making, as well as first-aid instructions, and a selection of simple recipes for cooking meals over a campfire.

CABLE, G. W. *Old Creole Days.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 216 pp. 60¢. This is the story about the French Quarter of New Orleans at the turn of the eighteenth century. A paperback.

CASTILLO, E. L. *All About the U. S. Navy.* New York 22: Random House, Inc., 457 Madison Avenue. 1961. 144 pp. $1.95. "This book," says Admiral Nimitz, "is mostly about the Navy today—the excitement of a carrier task force launching a strike against an 'enemy' base on land, frogmen creeping ashore to lay the groundwork for a massive amphibious assault, the men who hide beneath the sea in submarines carrying the mighty Polaris missile, and the constant struggle for supremacy between the surface ship and the submarine."

CHURCHILL, SIR WINSTON. *The American Civil War.* New York 16: Dodd, Mead and Company, 432 Fourth Avenue. 1961. 145 pp. $3. The American Civil War has stirred the imagination of many historians, not the least Sir Winston Churchill. His story of the conflict, written with a deep sympathy partly springing from his own family connection with this country, makes up some of the finest chapters in his great *History of the English-Speaking Peoples.* They are complete in themselves; a short and brilliant account of the disaster from Fort Sumter to Appomattox.

CLYMER, ELEANOR, collector. *Arrow Book of Funny Stories.* New York 36: Scholastic Book Service, 33 West 42nd Street. 1961. 96 pp. 25¢. Funny poems about animals, and people—limericks, songs, and rhymes.

Collegiate World Atlas. Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1961. 416 pp. $6.95. For a better understanding of world news, to find a place and its population quickly, for a true picture of country and continent relationships, you need a really good atlas. This versatile, all new, handy size atlas with more than 200 pages of full-color maps and 120 pages of timely facts and photographs provides this information.

Current events unfold in an easy pattern when you turn to the 178 pages of political maps showing the latest information on every continent, country, United States state, and Canadian province. Boundaries are emphasized in rich, contrasting colors, cities and towns are shown in large, clear type—making the maps easy to read and appealing to the eye.

Twenty-five beautiful, full-color map pages of historic periods such as the Roman Empire about 400 A.D., Europe and the Crusader States (about 1140), Asia at the death of Kublai Khan—1294, the Civil War, *etc.* provide an excellent reference for the student or anyone interested in world history. Dramatic color views of the Old and New World as they might be seen from outer space give a new picture of the earth.

Final 1960 census figures for all places in the United States over 1,000 population are featured in the completely new index. More than 25,000 places are listed alphabetically with index key, page number, and population, making the book ideal for home or office use. One hundred and twenty pages are devoted to furnishing thousands of interesting and pertinent facts of geographical, political, and historical significance. Examples are: 40 pages of commentary and photographs of historic and scenic points of interest in the United States; 30 pages of information on principal universities and colleges in the United States; World Political Information Table showing capital, largest city, area, population, predominant language and religion, *etc.*, for every country and state as well as principal rivers, mountains, islands, *etc.*; 16 pages of detailed United States tables on state areas and populations, metropolitan areas, air distance, climate, economy, and other geographical facts.

COMMINS, D. B. *All About the Symphony Orchestra and What It Plays.* New York 22: Random House, Inc., 457 Madison Avenue. 1961. 141 pp. $1.95. This book presents the wonderful world of the symphony orchestra:

the players and their instruments—strings, wood winds, percussions, and brass; the conductor, who leads the players and interprets the music; the great composers of past and present; the outstanding forms of orchestral music—overture, suite, concerto, symphony, and tone poem.

CORNWALL, I. W., and M. M. HOWARD. *The Making of Man*. New York 10: E. P. Dutton and Company, Inc., 300 Park Avenue South. 1961. 63 pp. $3. When Charles Darwin's *Descent of Man* was published fossil evidence was confined to a solitary specimen—the Neanderthal skull. Scientists have since been able to trace with confidence the ancestors of the modern horse and elephant, but, until the present century, human fossils remained scanty and even today are rarities in comparison with the bones of lower animals. A skull, even a solitary tooth, can enable the expert to distinguish Man from ape, but, for those without special knowledge, the fossil fragments must be brought alive.

DAVIS, JULIA. *No Other White Men*. New York 36: Scholastic Book Service, 33 West 42nd St. 1961. 480 pp. 50¢. The story of Lewis and Clark's exploration of the Louisiana Territory and the dangers they encountered with the Indians.

de CAMP, L. S. *Man and Power—The Story of Power from the Pyramids to the Atomic Age*. New York 20: Golden Press, Inc., Educational Division, 630 Fifth Avenue. 1961. 192 pp. (8" x 11") $4.99. Here is the dramatic story of power from ancient Egypt to the atomic age. Each phase in the progression from primitive methods to the highly complex systems of today is explored in fascinating detail—man's first attempt to make the natural elements of wind and water work for him; his later development of combustion devices —steam and gasoline engines; his dramatic achievements in the field of electrical power; his present-day experiments with nuclear energy. More than 250 full-color illustrations amplify the superb text. These include reproductions of original documents; photographs by Russ Kinne, Roman Vishniac and others; and paintings by Alton S. Tobey.

DICKENS, CHARLES. *A Tale of Two Cities*. New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 480 pp. 50¢. A famous classic.

DIETRICH, FRED, and SEYMOUR REIT. *Wheels, Sails and Wings—The Story of Transportation*. New York 20: Golden Press, Inc., Educational Division, 630 Fifth Avenue. 1961. 100 pp. (10" x 12¾") $3.99. In this high-powered era of the astronaut and the jet, a book telling how man has conquered time and space is especially apt. Hundreds of full-color pictures, informative diagrams, and a lively text show dramatic episodes in the history of motion. Here are man's first daring exploits on the sea, the spirited days of railroading in the wild West, automobiles from the Daimler to tomorrow's atomic cars, and flight from the Wright brothers to space ships. Illustrated by Harald Bukor, Karl Preschke, Oswald Voh, and Harry Schaare.

di LAMPEDUSA, GIUSEPPE. *The Leopard*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 288 pp. 75¢. This story is set in Sicily and centers on the life of Don Fabrizio, a remarkable man, a tolerant despot who rules over thousands of acres and hundreds of people. He is the "Leopard," so named for the proud beast emblazoned on his family's coat of arms.

DOUTY, E. M. *America's First Woman Chemist: Ellen Richards*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1961. 191 pp. $2.95. Opening doors wide for women, pioneer chemist Ellen Richards gave new meaning to the word "housekeeping," a meaning that stretched far beyond the

simple walls of home. She was the first woman student at the Massachusetts Institute of Technology, one of the few women to be made a Fellow of the American Association for the Advancement of Science, and a major influence in the field of Home Economics.

EGAN, P. S. *Space for Everyone*. Chicago 80: Rand McNally and Company, P. O. Box 7600. 1961. 72 pp. $1.50, paper; $2.95, cloth. This booklet presents the basic facts for understanding the solar systems and the star. In this modern world, the subjects of rockets, missiles, and satellites, and man's future in space are also discussed.

EIFERT, V. S. *Louis Jolliet, Explorer of Rivers*. New York 16: Dodd, Mead and Company, 432 Park Avenue, South. 1961. 242 pp. $4. Louis Jolliet's personal life receives full attention—his happy marriage and his large family of children; his various commercial interests in minerals, trapping, and fishing; and his association with Canadians of his day, particularly the great Frontenac. But it is with the supreme woodsman and hydrographer that the book is chiefly interested and in his outstanding services as an explorer.

ELLIS, D. M.; J. A. FROST; and W. B. FINK. *New York: The Empire State*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1961. 512 pp. $4.88. This book tells the story of New York State. You will learn about its land and its people from prehistoric days to the present, about life in New York today, and about the past events that have made this life possible.

The thirty-two chapters of the book are combined into nine units. Each unit starts with a brief statement that explains what the unit is about. At the end of each unit is a section that will supply you with some additional stories about New York and with some interesting things to do. The section ends with a list of books about the people and events in the unit.

Each chapter has its own study aids. "Warm-up for the Chapter" contains questions or exercises that are planned to start you thinking about the chapter before you read it. The "Summary" at the chapter's end lists the major points. Following the "Summary," a list of questions, "Think These Over," provides practice in thinking through a problem. Lists of important words and places are also included to help you to improve your vocabulary and to increase your knowledge of New York's geography.

FAULKNER, H. U., and H. C. ROSENTHAL. *A Visual History of the United States*, second edition. New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1961. 192 pp. (8½" x 11"). The purpose of this book is to make American history vivid and precise. The authors feel that many events and facts can be presented precisely in a small amount of space by means of graphics. Thus, with a minimum of words, the student is able to grasp the happenings during a period of history by examining the colorful, interest-arousing, factual graphs, chart, and diagrams. Each part of facing pages contains about 1,000 words of text and one full page of graphic material. The graphics serve to emphasize and reinforce the subject matter of each chapter.

FERGUSON, R. D. *The Story of Alexander Henry, Fur Trader*. New York 17: St. Martin's Press, Inc., 103 Park Avenue. 1961. 159 pp. $2.95. Alexander Henry (the older) was among the first "English" fur traders to adventure into the former French territory after the fall of New France. With rare courage and persistence, he began in 1760 to trade with the Indians. He was to owe his life to his capacity to make friends with them. Henry was caught up in the fury of Pontiac's war and, after a succession of hair-breadth escapes, survived the frightful massacre at Fort Michilimackinac. He dis-

guised himself at one time in the picturesque garb of a voyageur, at another in the feathers and war-paint of an Indian and was hunted for his life among the woods and lakes of the wilderness. Many another danger he endured, and lived to write about his adventures.

FITZGERALD, CHRISTINA. *Mrs. Killick's Luck*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 79 pp. $2.95. Now we adults can see ourselves exactly as our children see us. Christina Fitzgerald, was nine when she wrote this little novel, and her blend of charm and wry comment on human frailties is something that any mature writer will envy.

5 World Biographies. New York 17: Harcourt, Brace and World, Inc., 750 Third Avenue. 1961. 775 pp. $3.72. This book contains the following biographies: "Life of Caesar" by Plutarch; "Michelangelo Buonarroti" by Giorgio Vasari, "Napoleon" by Emil Ludwig, "Madame Curie" by Eva Curie, and "Mahatma Gandhi" by Vincent Sheean. Each biography contains an afterword and study questions. A teacher's manual is also available.

4 American Biographies. New York 17: Harcourt, Brace and World, Inc., 750 Third Avenue. 1961. 787 pp. $3.72. This anthology contains 5 World, 5 American, and 4 English biographies; 4 novels for adventures, 4 novels for appreciation, and 4 American and 4 English novels. A brief introductory note prepares the student for his reading of each biography. They include teaching and learning aids. A teacher's manual is also available.

4 English Biographies. New York 17: Harcourt, Brace and World, Inc., 750 Third Avenue. 1961. 775 pp. $3.48. This anthology contains the following biographies: "Shakespeare of Longon" by Marchette Chute; "The Life of Samuel Johnson, LLD., by James Boswell; "Queens Victoria" by Lylton Strachey, and "The Edge of Day" by Laurie Lee. Each biography has an Afterword and study questions. A teacher's manual is also available.

FRANKLIN, E. L., and JESSE LEMISCH. *Autobiography and Other Writings*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 352 pp. 50¢. Here is Franklin the public figure; scientist, inventor, educator, diplomat, politician, and humorist.

FREEMAN, I. M. *All About Sound and Ultrasonics*. New York 22: Random House, Inc., 457 Madison Avenue. 1961. 143 pp. $1.95. In this book, the author, an eminent physicist, tells what scientists have discovered about sound. And he explains the research being undertaken on the frontiers of the science.

GISSING, GEORGE. *The Private Papers of Henry Ryecroft*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 192 pp. 60¢. Reveals Gissing's dissenting opinions on a curious variety of antique and modern subjects.

GOODRICH, N. L. *The Medieval Myths*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 224 pp. 50¢. This book features Beowulf, Peredur, Roland, Berta of Hungary, Prince Igor, and The Cid. Each section of the book contains an historical and literary introduction relating the myth to its significant background and its importance to people of the medieval world. The author also gives the reasons for the development of the legends from folk stories to the masterpieces of world literature which still have meaning for modern man.

GRANT, F. C. *Basic Christian Beliefs*. New York 11: The Macmillan Company, 60 Fifth Avenue. 1960. 136 pp. $2.95. This book presents the fundamentals of the Christian faith prepared for lay readers.

GRANT, MICHAEL. *The World of Rome*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 384 pp. 75¢. A survey of the conquests and culture of the Romans from 133 BC to 217 AD —an era of unparalleled power when Rome made its greatest impact on the world. Illustrated.

GUILLOT, RENE. *Riders of the Wind*. Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1961. 174 pp. $3.50. This is a story about Calvi, the boy from Nantes, in France, a homeless boy who did not know who his parents were. A kindly, one-eyed sea captain won him in a card game from his cruel and greedy master. After learning the ways of the traders, Calvi is sent on a journey to Africa in command of a vessel. Here his adventures really begin!

———. *The Wild White Stallion*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 159 pp. $2.95. From the moment Folco saw the little foal that was to become White Crest, wonderful wild stallion, the boy loved the horse and wanted him for his own.

GUY, A. W. *William*. New York 16: Dial Junior Books, 461 Park Avenue South. 1961. 123 pp. $2.95. A story of school life.

HALL-QUEST, O. W. *With Stanley in Africa*. New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1961. 157 pp. $3.25. Here is the exciting story of one of the great figures in the history of African exploration. Perhaps more than any other man, Henry Morton Stanley was responsible for opening the Congo to European colonization.

HATCH, ALDEN. *Edith Bolling Wilson, First Lady Extraordinary*. New York 16: Dodd, Mead and Company, 432 Park Avenue, South. 1961. 285 pp. $5. Edith Bolling Wilson was the subject of controversy from the moment she announced her engagement to President Woodrow Wilson in October 1915, until he left the White House in March 1921. The widow of Washington jeweler Norman Galt, she was acknowledged to be one of the most beautiful women in America. Her marriage to the president, though a true love match, was the subject of gossip and political repercussions throughout the country.

HAWKINS, SIR JOHN. *The Life of Samuel Johnson, LL.D.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1961. 341 pp. $5.95. In 1787 Sir John Hawkins, a contemporary and longtime friend of Samuel Johnson, published his biography of Johnson. By the time the book reached its second edition, however, it had fallen victim to a violent and sustained attack by the Boswell circle. Boswell himself delivered the book's death warrant in a classic indictment, widely read and generally accepted, in which he accused Hawkins of a careless disregard for accuracy, of pedantically disgressing from his subject at every turn, and of consciously defacing Johnson's image out of sheer malevolence.

HELM, EVA. *The Mystery in the School Laboratory*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 153 pp. $2.95. Both boys, Per Falk and Jorgen Sondermark, had noticed that something strange was going on after hours in the room next to the school laboratory. Who could be burning the lights until no-telling-when? And why?

HICKOK, L. A. *The Touch of Magic*. New York 16: Dodd, Mead and Company, 432 Fourth Avenue. 184 pp. $3.50. The prospects of life seemed bleak for Anne Sullivan when she received Captain Keller's offer to teach his daughter, Helen. The challenge was formidable as the child was deaf, dumb, and blind. But, threatened with blindness herself, and terrified of having to

return to the grim institution that had been her home, it was an answer to Anne's prayers.

HIEATT, A. K., and CONSTANCE, selectors and adapters. *The Canterbury Tales of Geoffrey Chaucer.* New York 20: Golden Press, Inc., Educational Division, 630 Fifth Avenue. 1961. 144 pp. (8" x 11") $4.99. At long last young readers may partake of the rich literary banquet table laid out by Geoffrey Chaucer. Here, for high-school students, the Canterbury tales are superbly retold in modern English prose which retains all the zest and humor of the original. To complement these twelve stories, the celebrated artist Gustaf Tenggren has created a rich array of paintings that capture the spirit of Chaucer's England.

HODGES, MARGARET. *What's for Lunch, Charley?* New York 16: Dial Junior Books, 461 Park Avenue South. 1961. 80 pp. $2.75. The story of Charley and his school life.

HOOVER, HERBERT. *Addresses Upon the American Road—1955-1960.* Caldwell, Idaho: The Caxton Printers, Limited. 1961. 433 pp. $7.50. Here Herbert Hoover speaks of foreign relations and of domestic and social questions, of engineering and scientific matters, of educational and charitable activities, and of various incidents and phases of American life. He gives expression to his views on the United Nations; he voices his concern for the enslaved countries and states his belief that virile races cannot long be held in bondage. He offers his opinions regarding Presidential pensions and Presidential disability, and he discusses such matters as the reorganization of the Executive branch of government, the preservation of the American way of life, and the work of a great character-building organization, the Boys' Clubs of America.

Issues Before the 16th General Assembly. New York 19: Taplinger Publishing Company, Inc., 119 West 57th Street. 1961. 224 pp. 50¢. What are the major world problems before the Assembly in this year's session? What is the background of these problems? How are the member nations likely to vote? The answers to these questions are to be found in this book. Presented annually by the editorial and research staffs of the Carnegie Endowment, the review is carefully documented, lucid, and thoroughly authoritative. The new edition of *Issues* accords special treatment to the schemes for reorganizing the Secretariat, including the Soviet "troika" proposal. There is a roundup of new economic programs, and a major section is devoted to an analysis of events in the Congo. In addition the publication gives detailed attention to the little-understood revolution in Angola. It reviews the conflict over Berlin and the background of negotiations for disarmament and cessation of nuclear testing. It discusses the controversial issue of Communist China's representation in the General Assembly.

JACKSON, C. P. and O. B. *The Short Guard.* New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1961. 156 pp. This is an exciting sports story filled with interesting on-the-basketball court plays and action pictures.

JEANES, CHARLOTTE, and RAYMOND CARLSON. *Water and the Thirsty Land.* Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 32 pp. (8½" x 11"). Trade $2.50 list; Library $2.70 net. Here is the story of our attempt to conserve our water supply, illustrated with full-colored photographs from *Arizona Highways* magazine.

JOHNSON, GEORGE. *Richard Nixon.* Derby, Connecticut: Monarch Books, Mail Order Department, Capital Building, Division Street. 1961. 158

pp. 35¢. This biography explores facets of his political and personal life. It is filled with anecdotes and highlights from the dramatic moments of his stormy career.

JOHNSON, J. R. *Anyone Can Live Off the Land.* New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1961. 122 pp. $2.95. This is a practical book about how to survive in the wilderness, written by a major on active duty with the United States Marines, formerly a field executive for the Boy Scouts of America.

KLOTS, A. B. and E. B. *1001 Questions Answered About Insects.* New York 16: Dodd, Mead and Company, 432 Park Avenue, South. 1961. 260 pp. $6. Included are descriptions of insect origins and classification, structures, distribution and environments, growth and development, senses and communication, behavior, societies, and the relationships of insects to plants, animals and man. The complex societies of the ants, the dance of the bee, the flight of the locust, and the life cycle of the butterfly are examples of the phenomena which make the realm of the insects one of the most wonderful in nature.

KNOTT, IRMA. *This Thing Called Love.* Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 160 pp. (5½" x 8"). Trade $2.95 list; Library $2.85 net. Sally is an attractive heroine who lives in a lively world of family and relatives. This is a fast-moving novel full of excitement and fun.

KOMROFF, MANUEL. *Beethoven nd the World of Music.* New York 16: Dodd, Mead and Company, 432 Fourth Avenue. 1961. 183 pp. $3.50. In this biography of Beethoven, the life of the man and of the composer are linked inseparably. Here is an account of the harsh responsibilities of his poverty-stricken boyhood in Bonn, and the eagerness with which he pursued his musical apprenticeship. There is the happy period in his youth when his virtuosity as pianist opened the doors for him to the palaces of Vienna, to a glittering life that did not distract him, however, from his striving to perfect his art. Finally, there are the tribulations of his maturity and a description of the flowering of his genius.

LANSING, ALFRED. *Shackleton's Valiant Voyage.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 128 pp. 35¢. Twenty-eight men face a limitless expanse of ice. Between them and civilization are 1200 miles of drifting floes, giant seas, violent storms, and yawning crevasses.

LEWIS, G. W. *The Ape I Knew.* Caldwell, Idaho. The Caxton Printers, Ltd. 1961. 263 pp. $5. Living and traveling with a carnival show provided a whole new series of experiences for the Lewis family. The first four weeks were extremely discouraging for they were almost continually plagued by rain, and the receipts were poor. At Klamath Falls, Oregon, they enjoyed a pleasant and profitable week, and business held up well when they crossed over the Cascades to Pasco, Washington, and continued eastward across Idaho and Montana.

LEWIS, NORMAN. *20 Days to Better Spelling.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 240 pp. 50¢. Discusses, in 23 chapters, the fundamental principles under which English spelling operates. A do-it-yourself approach.

LEWIS, SINCLAIR. *Arrowsmith.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 440 pp. 75¢. This is a portrait of an American whose work becomes his life. A paperback.

———. *Babbitt*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 328 pp. 75¢. The author portrays the glibness and irresponsibility of the hardened, professional social climber. A paperback.

———. *Main Street*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 440 pp. 75¢. The lonely predicament of Carol Kennicott, caught between her desires for social reform and individual happiness, reflects the position in which America's turn-of-the-century, "emancipated" woman found herself. This book attacks the drab complacency and ingrown mores of those who resist change. A paperback.

LITVINOV, IVY and TATIANA, translators. *The Queen of Spades and Other Tales*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 320 pp. 60¢. Four tales translated from the Russian language.

MACDONALD, GEORGE. *The Light Princess*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 288 pp. $4.95. Not since the Twenties have MacDonald's stories been in print, and never have they been collected in a single volume as they are here, with all the original illustrations. In addition to the title story, "The Light Princess," and the seven stories that made up MacDonald's original *Dealing with Fairies*, this delightful book includes "The Carasoyn," and "The Day Boy and the Night Girl," two stories that appeared in British magazines, plus "Light Daylight," which the author published as a separate tale before making it a chapter of his memorable *At the Back of the North Wind*.

MADRIGAL, MARGARITA. *See It and Say It in Spanish*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 256 pp. 50¢. The basic feature of this easy-learning series is the use of line drawings which immediately explain the meaning of each new word or phrase. Words which look and sound like their English equivalents start the student in immediate conversation. Other features include a pronunciation guide, grammar sections, a simple 800 word working vocabulary and a travelers word list. A similar book, *See It and Say It in Italian* (1961, 256 pp. 50¢), is also available.

MARCUS, R. B. *Joseph Priestley Pioneer Chemist*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 145 pp. $1.95. Joseph Priestley is known as the "Father of pneumatic chemistry," because of his pioneer work with gases. The methods he invented of collecting and testing gases enabled later chemists to carry on where he left off. His greatest discovery was the preparation of oxygen from mercuric oxide in 1774. He is credited with having discovered a number of other gases, among them hydrogen chloride, ammonia, and carbon monoxide.

McCARTY, R. K. *Lorna Evans, Social Worker*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1961. 192 pp. $2.95. This is the story of a girl dedicated to helping others, a love story on two levels—love of humanity and love for a man. Utilizing authentic case histories, Mrs. McCarty has written a moving and dramatic career-romance.

McGRADY, MIKE. *Crime Scientists*. Philadelphia 5: J. B. Lippincott Company, East Washington Square. 1961. 160 pp. $3.25. This book takes the reader to the scene of a variety of crimes and explains how detectives, laboratory technicians, photographers, chemical analysts and other experts develop the evidence that will lead them to the criminal. It also describes the

men who wage this new kind of warfare: men who are skilled in science, who fight crime with test tubes and detect criminals with laboratory findings.

McMILLEN, WHEELER. *Land of Plenty: The American Farm Story.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1961. 138 pp. $3.95. In this lively book, the former editor of the *Farm Journal* traces the story of American agriculture from its colorful beginnings to its important role in our present-day lives.

MEDAWAR, P. B. *The Future of Man.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 128 pp. 50¢. A biologist speculates on the genetic qualities of future generations of mankind.

MOODY, RALPH. *Mary Emma and Company.* New York 3: W. W. Norton and Company, Inc., 55 Fifth Avenue. 1961. 235 pp. $3.95. This is the humorous, heartwarming account of their private war for independence, a war against poverty and sometimes against well-meaning relatives and friends who occasionally intrude on the family unity. It chronicles the daily defeats and victories in the long struggle to keep the family together in its own home.

MURRAY, DON. *Man Against Earth—The Story of Tunnels and Tunnel Builders.* Philadelphia 5: J. B. Lippincott Company, East Washington Square. 1961. 192 pp. $3.95. This is the story of all kinds of tunnels, from ancient times to the present: tunnels through mountains and under rivers, tunnels called mines, tunnel cities in the Arctic, railroad and highway tunnels, and even tunnels that may be built on other planets in the future. It is also the story of modern technology and of the men who work on the tunnels.

O'CONNOR, PATRICK. *Treasure at Twenty Fathoms.* New York 18: Ives Washburn, Inc., 119 West 40th Street. 1961. 152 pp. $3. This is a fascinating account of how Chuck was taught by a pro to do Scuba diving, the wonderful and fearful under-water world he got to know, and what happened to him personally because of his diving. The author has given his readers a remarkable chance to share the world of skin divers through a realistic and exciting story of a highly developed skill that can be used for the pure fun of exploration, as for important rescue and salvage projects.

OGILVIE, ELISABETH. *Becky's Island.* New York 36: Whittlesey House-McGraw-Hill Book Company, Inc., 330 West 42d Street. 1961. 189 pp. $3.25. It is in her flight from the restrictions of what seems a stuffy adult world that Vicky stumbles upon Becky's Island and its neglected people and responds with warmth to its challenge. There she also encounters Luke Pepperell, and in struggling with her newly discovered emotions and with the problems of others, Vicky finds a purpose and romance in her own life.

PETERSON, WILLIS, and JEFFREY CHURCH. *Nature's Lumberjack.* Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 32 pp. Trade $2.50 list; Library $2.70 net. This is the story of a beaver nicknamed Nature's Lumberjack. Realistic full-color photographs from the *Arizona Highways* magazine are included—many of them are full pages.

———, and ETHEL CLIFFORD. *Wapiti: King of the Woodland.* Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 32 pp. (8½" x 11"). Trade $2.50 list; Library $2.70 net. Full-colored photographs from *Arizona Highways* magazine illustrate this story of an elk in the woodlands of America.

PILKINGTON, CYNTHIA. *Elephant Over the Alps.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1961. 127 pp. Two thousand years after Hannibal's momentous journey through the wild countryside of Gaul and over the unknown Alps, an expedition set out from England to try to follow

in his trail. The heroine of their adventure was an eleven-year-old elephant from Italy.

POLNER, MURRAY, and ARTHUR BARRON. *Where Shall We Take the Kids?* Garden City, New York: Doubleday and Company, 1961. 238 pp. $1.95. This is a guide to New York City—what to see, how to get there, what the hours are, and how much it costs. This book, while not encyclopedic, is thorough, diverse, and comprehensive, contains 16 pages of pictures.

POOLE, LYNN and GRAY. *Danger! Icebergs Ahead!* New York 22: Random House, Inc., 457 Madison Avenue. 1961. 82 pp. $1.95. The largest iceberg ever seen was twice as big as the state of Connecticut. It was in the Antarctic Ocean. However, the most dangerous icebergs—the ones described in this book—are in the North Atlantic. Almost every year, hundreds of them enter the shipping lanes.

PRICE, CHRISTINE. *Made in the Middle Ages.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1961. 118 pp. $3.75. This is a book about the craftsmen who created the armor, the furniture, the jewelry, and all the other beautiful objects used in the castle and cathedral. Here are intricately carved ivory chessmen, water ewers molded in the shape of griffins, enamel jewelry, and rare and costly objects of gold.

RAND, AYN. *Anthem.* New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 128 pp. 50¢. This novel depicts the horrors that can happen to mankind when current social trends are projected into the future. It is a story of courage and rebellion against totalitarian collectivism.

RAVIELLI, ANTHONY. *Wonders of the Human Body.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 128 pp. 35¢. This is a description of the parts of the human body and how they function.

ROBBINS, R. H. *Early English Christmas Carols.* New York 27: Columbia University Press, 2960 Broadway. 1961. 95 pp. $5. This book contains the words and music of 30 beautiful carols of medieval England transcribed from the original manuscript sources. Each carol is also accompanied by background and pertinent facts about its history. Included is a brief bibliography and a note on the performance of the carols, as well as a 10-page introduction on their development as a form.

ROBERTS, DANIEL, compiler. *L'Enfance De Jean-Christophe: A Selection from L'Aube by Romain Rolland.* New York 22: Cambridge University Press, 32 East 57th Street. 1961. 85¢. In these selections in French, Romain Rolland, through Jean-Christophe, endeavors to show how humanity is linked in joy and grief and to expose the pathetic stupidity and falsehood which made the society of his day often like a self-destructive jungle fauna. The compiler has selected these parts for easy reading in learning to read French.

ROEHRENBECK, W. J. *The Regiment That Saved the Capital.* New York 16: Thomas Yoseloff, Inc., 11 East 36th Street. 1961. 244 pp. $5.95. On April 19, 1861, the "darling" of New York City and the Nation marched down Broadway amidst a wildly cheering crowd of worshippers and embarked for the Capital. Six days later, the famous Seventh would become the first military contingent to bring relief to the Nation's capital. This is the story of the forty-six days that the Seventh Regiment spent in the service of the Union. It is the colorful account of the march to Washington and the obstacles encountered on the way; the weeks spent camping in the Senate Chamber of the Capitol Building; the move to the model Camp Cameron on Meridian Hill; the march into Virginia; and the return to New York and its aftermath.

ROUNDS, GLEN. *Wild Orphan.* New York 11: Holiday House, 8 West 13th Street. 1961. 74 pp. $2.95. The beaver kit was orphaned before he was weaned—not by natural enemies but by men. They invaded his swamp and destroyed his family. During the lonely, hungry time that followed, the kit struggled to stay alive. He learned to find food, to avoid dangers, and to begin the beaver business of building. But this last was after spring and summer had passed; the lonely time was a long one.

SARGENT, R. L. *Automobile Sheet Metal Repair.* Philadelphia 39: Chilton Company—Book Division, 56 & Chestnut Streets. 1961. 441 pp. $7.95. This book presents technical information necessary for the automobile sheet metal repairman. Beginning with sheet metal and sheet metal parts, the author explains, by using simple metallurgical terms, how to understand the properties of sheet metal and their effect on the characteristics of the panels of an automobile. He explains, under six basic conditions, collision damage and its variations. The definition and use of the basic hand tools, the hammer and the dolly block, are also given.

Chapters 4, 5, and 6 covers actual repair operations. The process of shrinking metal in straightening typical damaged panels; welding techniques and procedures, including oxyacetylene, electric arc, and electric resistance processes; straightening and filling, with both body solder and plastic materials are defined and applied.

Chapter 7 deals with the fundamentals of the actual straightening procedures. Particular emphasis is placed on the factors which determine whether force should be applied in tension lengthwise of the panel surface, or directly against it. Also covered is equipment such as jacks, clamps, and external pull jacks as well as checking equipment used in determining when alignment has been restored.

In simple language the author continues to describe the application of repair procedures to the actual job and the plan of practice which the beginner should follow to develop skill. A variety of damages have been included in the book to provide a good cross section of the typical jobs which the sheet metal worker encounters in his daily work.

SATERSTROM, M. H., and J. W. RENNER. *Educators Guide to Free Science Materials.* Randolph, Wisconsin: Educators Progress Service. 1961. 334 pp. (8½" x 10⅞") $6.25. This service is devoted exclusively to free science materials. It is a complete, up-to-date, annotated schedule of selected currently available free audio-visual media and other science curricular enrichment aids—bringing you the compiled information on these free educational and informational materials, all at your finger-tips, within the covers of a single book.

This second edition lists, classifies, and provides complete information on titles, sources, availability, and contents of 800 free films, 119 free filmstrips and 245 other free supplementary materials—bulletins, pamphlets, exhibits, charts, posters, and books—a total of 1,164 free items, of which 286 are new in this edition. It gives the busy, alert educator and librarian information on the nature, purposes, and use of these materials not to be found in any other single source.

SHAPIRO, M. J. *A Beginner's Book of Sporting Guns and Hunting.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1961. 179 pp. $3.95. Entire books have been written solely about the rifle, the shotgun, ballistics, deer hunting, big game hunting, target shooting, and so forth. Ballistics and ballistic research alone is a multi-million dollar facet of every major firearms

company. This book explains how a novice graduates to the accomplished shooter and how a beginner masters the complications of terminology, technicality, and theory of shooting.

SHIELDS, RITA. *Cecelia's Locket*. New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1961. 148 pp. $2.95. Her mother's beautiful heart-shaped gold locket will be Cecelia's some day—when Daddy feels she has earned it. Meanwhile, there is the bewildering business of getting along with Doris, her stepmother, and the excitement of getting acquainted with the large, exuberant Italian family in the apartment downstairs.

SHIRER, W. L. *The Rise and Fall of Adolf Hitler*. New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 192 pp. 35¢. This is the story of Hitler's beginnings—his triumphs and his downfall.

SMITH, IRENE. *Cities of the World, Paris*. Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1961. 128 pp. $2.75. In this book all of her many faces are vividly portrayed in text that moves as smoothly and swiftly as the Seine, and in the many gay, beautiful, and accurate pictures and decorative maps.

STANFORD, DON. *The Horsemasters*. New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 224 pp. 35¢. This story tells how a British boy or girl trains to take the British Horse Society's examination to become a Horsemaster.

STEEL, RONALD, editor. *Federal Aid to Education*. New York 52: H. W. Wilson Company, 950 University Avenue. 1961. 207 pp. $2.50. Throughout the nation "the question of the Federal government's role in education is being urgently debated. . . . The articles in this compilation are an attempt to place the major elements of this debate in focus." Contents are divided into the following parts: The Challenge Facing Education; The Question of Federal Aid; Public Aid to Parochial Schools; Aiding Higher Education; New Strategy; Bibliography.

STEIN, RALPH. *The Treasury of the Automobile*. New York 20: Golden Press, Inc., Educational Division, 630 Fifth Avenue. 1961. 252 pp. (8½" x 11¾") $9.98. In this big, luxurious volume, every important event in the 200-year history of the automotive age is covered. The illustrations—more than 400 of them, with 72 pages in full color—include a portfolio of two-page portraits of the finest cars ever built: Bugatti, Rolls Royce, Duesenberg, Hispano-Suiza, *et al.*, plus chapters on the sports car, Grand Prix cars, races and rallies, the car of tomorrow, and more. Here we read about the fire chariots—the automobile's extraordinary Eighteenth Century beginnings; the years of fulfillment—the rise of the internal combustion engine and the first real cars; early races and rallies—the quest for speed and the ordeal of endurance around the world; electric cars and steamers—two lovely dinosaurs en route to oblivion on evolution's dead-end street; the grand marques—Rolls, Alfa, Duesenberg, Mercer, Jaguar, Mercedes, the bugs, the Model T, the best; Grand Prix—latter-day jousts and tournaments of speed at home and abroad; sports cars—the rise in popularity of "the machine driven for the sheer pleasure of driving"; links with the past—world-wide virus: craze for elderly automobiles; and the future—no Bugattis in sight, but revolution stirs. Tomorrow may be breathtaking.

STUART, MARY. *Wildfire at Midnight*. New York 16: William Morrow and Company, Inc., 425 Park Avenue South. 1961. 214 pp. $3.50. This is a novel of suspense and romance set in the Scottish Hebrides.

SUTTON, C. E. *Black Panther Banner*. New York 28: The William-Frederick Press, 55 East 86th Street. 1961. 171 pp. $4.50. It is difficult to

conceive of an organization that has played a more felicitous role in molding the moral and physical fiber of American youth than has the Boy Scouts of America, and the contribution of those who have given of their time and knowledge to further the aims of this organization is correspondingly vast. This is the story of such a man, and of the boys who looked to him for leadership and guidance and marched under the banner of the Black Panther, dedicating their lives to the precepts laid down by the parent organization.

SUTTON, SHAUN. *Queen's Champion*. New York 10: St. Martin's Press, 175 Fifth Avenue. 1961. 245 pp. $3.75. The Age of Queen Elizabeth I of England was a golden age of daring, chivalry, and power, but it was also an age of Popish plots, of treachery, and of men ready to turn the Spanish cause to their own gain. Such a man was Sir Thomas Wycherley. The House of Penlynden—renowned through the centuries for its loyalty to the Crown—fell victim to his traitorous schemes.

TALLEY, NAOMI. *Imported Insects*. New York 16: Dial Junior Books, 461 Park Avenue South. 1961. 64 pp. $2.50. Here is the story of importing insects to control our insect pests—biological control.

TANNER, C. L., and RICHARD KIRK. *Our Indian Heritage: Arts That Live Today*. Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 32 pp. (8½" x 11"). Trade $2.50 list; Library $2.70 net. For over 2,000 years the Indians have been perfecting the art of weaving, carving, and basket and pottery making. This book explains how these arts were developed. Contains full-color photographs from *Arizona Highways* magazine.

TOMLINSON, H. M. *The Sea and the Jungle*. New York 22: New American Library of World Literature, Inc., 501 Madison Avenue. 1961. 256 pp. 60¢. This is a classic of travel literature describing some of the world's outlying reaches with meditations on subjects ranging from modern commerce to solitude.

TRAVERS, M. A. *The Wampanoag Indian Federation*. Boston 20: The Christopher Publishing House, 1140 Columbus Avenue. 1961. 247 pp. $4.50. Living in close association with the Pilgrims, and other settlers, these Indians of the Wampanoag Federation proved themselves to be, indeed, neighbors of the early colonists. However, in spite of their significant contributions to the early development of North American culture, historians have almost completely neglected to include the Wampanoags when recording the events of that important period. In this entertaining volume, the author has compiled many early documents and consulted reliable sources in an effort to bring to surging life the deeds and accomplishments of the Wampanoag. His study has resulted in a complete understanding and sympathy for the causes and effects of the ignominy of the American aborigine, while recalling their invaluable contribution to early America.

TRINKLEIN, R. E., and C. M. HUFFER. *Modern Space Science*. New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1961. 558 pp. $6.75. Illustrated with hundreds of magnificent photographs, drawings, and charts, this book is written lucidly, logically, and in language the layman can fully understand. It shows that the remarkable achievements of recent years are not accidental, but are the result of centuries of scientific experiment, of theories advanced and discarded, of careful mathematical calculations involving every branch of science.

Following a study of the chemical composition of the universe, the authors focus on the physical laws of space and the basic principles of astronomy, in-

cluding the nature of light and the measurement of time in space. They then embark on a fascinating discussion of the geography of space, as discovered through optical and radio telescopes. We learn the ways in which astronomers chart the heavens, the history of our solar system, the possibility of life on other planets, and the causes of dramatic celestial phenomena.

TURNGREN, ELLEN. *Hearts Are the Fields.* New York 18: Longmans, Green and Company, Inc., 119 West 40th Street, 1961. 183 pp. $3.50. Set in the farm country of Minnesota in the early 1900's, this is a novel about a domineering father and the interplay of his will and the wills of his children—who turn out to have minds of their own.

VERMES, J. C. *The Girl's Book of Physical Fitness.* New York 17: Association Press, 291 Broadway. 1961. 128 pp. $1.95. This book is a compilation of helpful information for girls that has been tried and tested by experts. A similar book, *The Boy's Book of Physical Fitness,* is also available for boys.

VERNE, JULES. *The Mysterious Island.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1961. 320 pp. 35¢. Take five escapees from Civil War prison, add a runaway balloon, mix well and drop onto a South Sea island, then you have Jules Verne's adventure story.

VOGEL, H. W., and M. L. CARUSO. *Ocean Harvest: The Future of Oceanography.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1961. 147 pp. $3. Man is almost totally ignorant of two thirds of the earth's surface; its vast oceans and seas. Only two per cent of the ocean bottom is adequately charted—only one per cent of mankind's food comes from the sea. This situation is in for some rapid changes as scientists take more and more interest in the vast untapped treasures of the ocean—minerals, food, the potential means of one day controlling our environment.

WALSH, FRANCES, selector. *That Eager Zest.* Philadelphia 5: J. B. Lippincott Company, East Washington Square. 1961. 256 pp. $3.95. The selections in this anthology, all autobiographical reminisces of childhood reading experiences and all touched with the excitement, the wonder, the unforgettable magic of discovery and exploration, affirm the enchantment that comes from the joyful meeting of children with the right books. They reach back in tribute to parents, teachers, librarians, or perhaps even strangers, who have opened doors to lifelong pleasure, and they reach forward to all who wish for every child a happy beginning to a lifetime of reading.

WALTRIP, LELA and RUFUS. *Purple Hills.* New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1961. 154 pp. $3.25. A sequel to the author's popular *White Harvest,* but for a story that can be read independently, *Purple Hills* continues the adventures of young Susan Mathis and her family after they have claimed a homestead in the new state of New Mexico.

WARNER, OLIVER. *The Glorious First of June.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1961. 184 pp. $4.50. "The First of June," wrote King George III in his own hand, "must be reckoned a proud day, as it will carry his (Howe's) name down to the latest posterity." The King was right. The Glorious First of June 1794, the first full-scale naval battle in the war with Revolutionary France, is remembered with honor, even though, strategically, it was not successful. Lord Howe defeated Admiral Villaret-Joyeuse, took six ships, and sank *Le Vengeur* without losing a single British ship, but a precious convoy, the cause of the action, reached France in safety.

Although French sacrifice had not been in vain, Howe had shown that, in general combat, the British navy was incomparable.

WEIMER, B. R.; E. L. CORE; and R. B. CLARKSON. *A New Manual for the Biology Laboratory*, third edition. New York 16: John Wiley and Sons, Inc., 440 Park Avenue South. 1961. 273 pp. $4.25. This laboratory manual is designed as an aid to the student. The laboratory manual points out important structures to be seen; it formulates certain problems and suggests ways for solving them; it suggests certain drawings that are designed to be helpful in recording facts; and it proposes questions that may lead to correct conclusions derived from the facts observed or data obtained through experiment. The thoughtful student will see many more things and frame many more problems than those suggested in the manual.

WELLS, ROBERT. *Navigation in the Jet Age*. New York 16: Dodd, Mead and Company, 432 Park Avenue, South. 1961. 118 pp. $3. The author explores this fascinating science as it keeps pace with our modern world, explaining the astonishingly capable equipment that guides precision planes, ships, and submarines; that works for missiles and satellites; that will one day help man navigate to his goal in space. Jack Coggins completes the picture with specific, detailed diagrams.

WHITE, DALE. *Young Deputy Smith*. New York 22: The Viking Press, 625 Madison Avenue. 1961. 191 pp. $2.75. Fourteen-year-old Willie Smith, a Kansas farm boy, went to Dodge City where his path crossed those of Wyatt Earp's and Bat Masterson's. Willie was soon dubbed the "Sassparilla Did," and his strict farm discipline stood him in good stead in the emerging frontier town. Willie worked hard at his grocery-store job, went to church, learned the proper way to handle guns, and, after many exciting adventures became a solid citizen—because of the Earp's and the Mastersons' brotherly interest.

WILLIAMSON, JOANNE. *The Glorious Conspiracy*. New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1961. 211 pp. $3. Benjamin Brown, a runaway from Liverpool, England, plays a vital role during the Glorious Conspiracy of the title—the all-important elections of 1800, when the freedom and democracy gained by the Revolution and seemingly assured by the Constitution were very nearly lost again.

WILSON, B. K. *Writing for Children*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 128 pp. $3.95. Writers for children will find in Barbara Ker Wilson's book a clear and practical exposition of a British editorial point of view. Among her topics are: subjects for a children's author, the use of magic in stories, the pitfalls of imitation, writing religious stories, building character, and picture books. She tells how to submit a manuscript, discusses contracts and royalties, gives cautions to the writer of mysteries for children, and outlines the mechanical production of a book.

WITTEN, HERBERT. *Rescue on the Big Sandy*. Chicago 7: Follett Publishing Company, 1010 West Washington Boulevard. 1961. 144 pp. (6½" x 8¼"). Trade $2.95 list; Library $2.85 net. This is the story of an Indian massacre in which part of a family was killed and two children were captured. Silas and some other men set out to rescue them. A story of pioneer days in Kentucky.

WITTICH, W. A., and G. H. HALSTED. *Educators Guide to Free Tapes, Scripts, and Transcriptions*. Randolph, Wisconsin: Educators Progress Service. 1961. 228 pp. (8½" x 10⅞") $5.75. This eighth edition is completely new and is devoted exclusively to selected free tapes, free scripts, and free transcriptions. It is a complete, up-to-date, annotated cross-media schedule of

selected audio aids and scripts—bringing the compiled information on these selected free educational enrichment audio and script materials within the covers of a single book. This edition lists, classifies, and provides complete information on sources, availability, and contents of 138 free tapes, 287 free scripts and 83 free transcriptions, a total of 508 valuable materials. Of these, 139 are new starred (*) titles.

Dr. Walter A. Wittich adds another to his significant articles on contributions of free audio materials to education. The tape recorder is rapidly emerging as a key instructional tool. Two demonstration tapes, suggesting means of improving instruction at elementary and secondary levels are listed on page 40. This *Guide* provides a wealth of supplementary audio and visual materials, at a minimum cost. It brings to the boys and girls of our nation, and to teachers and librarians, a vast range of education materials rich in value. They provide many experiences not otherwise available.

For educational as well as financial reasons, the many fine audio, visual, and other materials available from industrial, government, and philanthropic organizations have rendered and continue to render a valuable contribution to the curriculum.

WYNDHAM, LEE, compiler. *Dancers, Dancers, Dancers.* New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1961. 208 pp. $2.95. Dance stories have a fascination for *all* girls—those who dance and those who dream about dancing. Here is a brilliant collection, with a variety so wide that readers in their teens—and their younger sisters also—will find something with a special meaning just for them.

YOST, EDNA. *Famous American Pioneering Women.* New York 16: Dodd, Mead and Company, 432 Park Avenue, South. 1961. 158 pp. $3. From the earliest days to modern times, women have played a vital role in the history of this country, often in the face of prejudices against their doing so in a man's world. Here are the stories of thirteen such women who pioneered in their different fields.

Pamphlets

ALBRIGHT, A. D.; F. J. ESSENE; A. J. LOTT; and E. G. YOUMANS. *School Administration and the Human Sciences.* Lexington, Kentucky: College of Education, University of Kentucky. 1961. 119 pp. $1. Tells of efforts at the University of Kentucky to improve, over a 10-year period, its preparation program for school administrators through experimentation involving the human sciences.

Announcing an Examination for Engineering Aid, Mathematics Aid, Physical, Science Aid. Washington 25, D. C.: Board of U.S. Civil Service Examiners for Scientific and Technical Personnel of the Potomac River Naval Command Naval Research Laboratory. 1961. 22 pp. Listing and description of positions in these classifications available under U.S. Civil Service.

Annual Reports of State Boards for Vocational Education to the Office of Education, Division of Vocational Education. Washington 25, D. C.: U.S. Department of Health, Education, and Welfare. 1960. 76 pp. Summary of statistical and financial information for the fiscal year ended June 30, 1960.

ARMSBY, H. H. *The Three-Two Plan of Engineering Education.* Washington 25, D. C.: Superintendent of Documents. 1961. 37 pp. 20¢. Describes the 3-2 plan and includes a directory of the institutions, engineering and non-engineering, which are conducting this type of program.

BEAUMONT, J. A., and GEORGE SANDERS. *Educational Values in Club Programs.* Washington 25, D. C.: Superintendent of Documents. 1961. 26 pp. 15¢. A report of a conference conducted by the Division of Vocational Education, U.S. Office of Education, to develop a consensus that might result in a publication which would identify principles underlying appropriate activities and projects.

BEYER, SYLVA, and SARAH F. LEITER. *Life Insurance Selling: Careers for Women as Life Underwriters.* Washington 25, D. C.: Superintendent of Documents. 1961. 41 pp. 20¢. A survey of career opportunities for women in this field.

BROWN, N. C., editor. *Orientation to College Learning: A Reappraisal.* Washington, D. C.: American Council on Education. 1961. 156 pp. $2. A report of a conference, held at Princeton University (October 31-November 2, 1960) addressed to the following questions: What impressions does the entering student receive in the first week, the first semester, and the first year of college? Do these impressions fulfill his legitimate expectations? Do they confirm his finest hopes and elicit his best efforts? Or do they sometimes blunt his keenest interests and, in fact, seem to run counter to the aims of the college itself?

Bulletin of Information. Princeton, New Jersey: College Entrance Examination Board, c/o Educational Testing Service, Box 592. (1961. 58 pp.) Contains information about the Scholastic Aptitude Test, Achievement Tests, and Writing Sample—what tests to take, when, how to register, the test centers, calendar of test and registration dates for 1961-62, list of test centers, colleges participation in the CEEB program, *etc.* Other publications about the CEEB program available from the same source are: *College Board Score Reports* (1961. 64 pp.); *A Description of the College Board: Achievement Tests* (1961. 127 pp.); *A Description of the College Board: Scholastic Aptitude Test* (1961. 56 pp.); and *Your College Board Scores: Scholastic Aptitude Test Achievement Tests* (1961. 19 pp.).

Cooperative Research Projects. Washington 25, D. C.: Superintendent of Documents. 1961. 117 pp. 30¢. Contains brief descriptions of research projects that have been initiated with support from the Cooperative Research Program of the U.S. Office of Education. Each description presents a statement of the problem, the major objectives, and the procedures to be followed.

Day, N. J., and SARAH JONES. *Achieving Quality in School Library Service.* Tallahassee: William H. Pierce, Distributor of Publications for the Southern States Work Conference, Florida State Department of Education. 1961. 54 pp. $1.25. Discussed library education standards and workshop techniques. Of real value in the development of good school library programs.

ECKERT, R. E., and J. E. STECKLEIN. *Job Motivations and Satisfactions of College Teachers.* Washington 25, D. C.: Superintendent of Documents. 1961. 102 pp. 35¢. A study of faculty members in Minnesota colleges.

Educational Aids for Schools and Colleges. New York 17: National Association of Manufacturers, 2 East 48th Street. 1961. 16 pp. Provides information which will facilitate an understanding of our nation's economic system and the career opportunities available therein.

Evolution of the Alphabet A to Z. New York 17: West Virginia Pulp and Paper Company, 230 Park Avenue. 1961. 32 pp. Describes in pictures and text the directional aspects of the printed language and the evolution of its alphabetical components.

Eye Health Committee. *Teaching About Vision.* Kent, Ohio: American School Health Association. Kent State University. 1961. 20 pp. Teaching aids for grades kindergarten through eight.

Guidelines for Preparation Programs of Teachers of Secondary School Science and Mathematics. Washington 5, D. C.: NASDTEC-AAAS Studies, 1515 Massachusetts Avenue, N. W. 1961. 36 pp. Free. Recommendations of the Teacher Preparation-Certification Study of the National Association of State Directors of Teacher Education and Certification and the American Association for the Advancement of Science with the support of the Carnegie Corporation of New York.

HALFAKER, PHILIP. *A Summarization of Trends in Junior High School Education.* Muncie: Indiana Public School Study Council, Ball State Teachers College. 1961. 26 pp. $1; 5-10 copies, 15%; 11-25 copies, 25%; over 26 copies, 35% discount. The Indiana Public School Study Council, an organization composed of nineteen school systems with pupil enrollments of from 5,000 to 20,000, was organized at Ball State Teachers College, January 21, 1961. The Council was created to (1) promote cooperative research and study of common educational problems in member schools, (2) to share pertinent statistical information and educational practices, and (3) to stimulate active participation of teachers, laymen, school board members and administrators in educational planning and study. The Council intends to promote continued improvement of educational programs and services by utilizing the resources of all institutions and agencies interested in public education. This booklet is the result of one of the Council's projects. In outline form, it shows current trends and practices. It represents a summation of research studies, articles, and bulletins devoted to the junior high school.

Looking Ahead in Foreign Languages. Sacramento: California State Department of Education. 1961. 76 pp. A report of the production seminar and conference on the improvement of foreign language education in the elementary school.

MARTORANA, S. V.; J. C. MESSERSMITH; and L. O. NELSON. *Cooperative Projects Among Colleges and Universities.* Washington 25, D. C.: Superintendent of Documents. 1961. 51 pp. 35¢. Provides case history description of some successful programs.

MURPHY, M. C.; E. S. SPIRO; and C. C. CHERRIX. *Careers for Women in the Biological Sciences.* Washington 25, D. C.: Superintendent of Documents. 1961. 92 pp. 40¢. Discusses career opportunities for women in this field.

ODEGARD, P. H. *The Structure and Functions of American Government.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1961. 60 pp. $1. A study guide for the first semester of the TV Continental Classroom course organized on the basis of the 16 lessons.

GREENE, ALEXANDER. *Ohio Government.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1961. 105 pp. $1.48. A text for use in studying the government of Ohio.

Phoenix Union High Schools and Phoenix College System Superintendent's Annual Report 1960-1961. Phoenix, Arizona: Phoenix Union High Schools and Phoenix College District, 3010 North Eleventh Avenue. 1961. 88 pp. The third annual report for the purpose of telling the community about their seven high schools and their junior college—well presented.

Professional Profile of an Automobile Salesman. Detroit 2: General Motors Corporation, General Motors Building, 3044 West Grand Boulevard. 1961. 31 pp. Indicates how a career in retail automobile selling can mean a good income and life-long security. The booklet is full of factual information and practical advise from the experience of a number of successful salesmen in this field.

The Profile of Communism: A Fact-by-Fact Primer. New York 22: Anti-Defamation League of B'nai B'rith, 515 Madison Avenue. 1961. 119 pp. 95¢. In simple question-and-answer form, this book presents an analysis of Communism in Soviet Russia, China, and the free world. It is an easy-to-use reference book to aid in understanding the political and economic complexities of current events throughout the world. It is helpful for teacher background information and for use as a textbook in classes studying about Communism in contrast with Democracy.

A Program for Basic Research in the Physical Sciences. New York 20: Alfred P. Sloan Foundation, 630 Fifth Avenue. 1961. 49 pp. Surveys all the major facets of the program which includes physics, chemistry, mathematics, and related fields such as astronomy.

Progress of Public Education in the United States of America 1960-61. Washington, D. C.: U. S. Department of Health, Education, and Welfare, Office of Education. 1961. 83 pp. A summary report.

Rheumatic Fever and Rheumatic Heart Disease in Adults. New York 10: American Heart Association, 44 East 23rd Street. 1961. 15 pp. Points out that the disease most often strikes first following a streptococcal infection suffered in childhood.

Right Behind the Wheel. Detroit 2: General Motors, 3044 West Grand Boulevard. 1961. 29 pp. A collection of short articles on safe driving.

SCHMITT, M. L.; P. E. HARRISON; and A. L. PELLEY. *Industrial Arts.* Washington 25, D. C.: Superintendent of Documents. 1961. 82 pp. 45¢. Provides basic data related to the nature, scope, and sequence of industrial arts education in the public schools of United States. Also provides a base on which intelligent decisions can be made to determine the direction industrial arts should take in the years ahead. The analysis deals with 39 published state curriculum guides in 22 different states.

Spanish, Listening, Speaking, Reading, Writing, Grades Seven Through Twelve. Sacramento: Bulletin of the California State Department of Education. 1961. 77 pp. A curriculum guide planned to help teachers who are interested in using an audio-lingual method of instruction for teaching language.

SPLAVER, SARAH, editor. *Guidance Exchange.* New York 17: Occu-Press, 489 Fifth Avenue. 1961. 32 pp. $8 Annual Subscription. A bi-monthly digest of current guidance literature.

STEFFLRE, BUFORD. *School—What For?* New York 17: Occu-Press, 489 Fifth Avenue. 1961. 12 pp. $2.40 per set (one copy for each role plus one copy for the moderator). A short guidance playlet suitable for assembly presentation. Can be presented in 10 minutes, thus leaving the balance of the assembly period available for audience discussion. Another recent production is *Television Versus Homework* by Willa Norris.

STONEKING, L. W., and R. C. WELCH. *Teachers' and Students' Understanding of Arithmetic.* Bloomington: Bureau of Educational Studies and

Testing, School of Education, University of Indiana. 1961. 67 pp. $1.25. Presents an instrument developed to measure selected basic arithmetical principles and generalizations and its use with pupils in grade 8 and 12; undergraduates in grades 14, 15, and 16 taking a teacher preparation program; and teachers in seven geographic locations in the state of Indiana.

Teacher Exchange Opportunities. Washington 25, D. C.: Superintendent of Documents. 1961. 43 pp. Discusses teaching abroad and the Teacher Exchange Program. It also includes, by countries, descriptions of the positions available in 1962-63, and when and where to apply.

Thomas Alva Edison Foundation 15 Year and 1960 Annual Report 1946-1960. New York 18: Thomas Alva Edison Foundation, Inc., 8 West 40th Street. 1961. 49 pp. Describes achievements during this period.

THOMPSON, R. B. *Enrollment Projections for High Education 1961-1978.* Columbus 10: The Ohio State University. 1961. 47 pp. Project enrollments by ages 18, 19, 20, and 21 and by states from 1960 to 1978. Also includes birth by states from 1939 through 1960; the number of 18, 19, 20, 21, and 20-24 year olds by states in 1960; maps of the United States showing percentage of population increase, 1950-1960, under 5 years of age, 5.9 year olds, 10-14 year olds, and 15-19 year olds; and a chart showing births and death in United States 1930-1960.

TICKTON, S. G. *Needed: A Ten-Year College Budget.* New York 22: The Fund for the Advancement of Education, 477 Madison Avenue. 1961. 40 pp. Free. Discusses the prospect for increased demand for a college education over the next 10 years and describes the Ashford College Case Study; also contains a worksheet (8 pages) for developing a 10-year financial plan by colleges and small universities.

To Stimulate Reading Throughout the Nation. New York 18: National Library Week, 58 West 40th Street. 1961. 29 pp. Fourth annual report on national Library Week.

United Nations Guardian of Peace. Washington 25, D. C.: Superintendent of Documents. 1961. 43 pp. 25¢. An interesting description of the United Nations and its work.

The Uses of Television in Education. Chicago 37: Secretary, North Central Association, University of Chicago, 5835 Kimbark Avenue. 1961. 32 pp. A report of a seminar.

WELLMAN, F. E., and D. D. TWIFORD. *Guidance Counseling and Testing.* Washington 25, D. C.: Superintendent of Documents. 1961. 42 pp. 30¢. Presents basic considerations in evaluation of guidance, counseling, and testing program and some specific suggestions for data collection and analysis in this evaluation process.

WNYE Radio-Television Manual. New York: Board of Education. 1961. 208 pp. $1.25. Contains details about all the radio and TV series offered by the New York City Board of Education *via* its educational radio station for instructional purposes.

News Notes

PRINCIPALS PLEASE RESPOND

We need copies of Commencement Scripts and Programs.

The National Association of Secondary-School Principals is planning to publish a new issue of the *Commencement Manual* during the fall of 1962. This publication, as in previous issues, will emphasize new trends in Commencement programs, including programs, scripts, and descriptions of activities that related to graduation from high school. We will be preparing this copy during the summer of 1962.

We are interested in receiving copies of programs and scripts and descriptions of the *promotion* activities in the junior high school and the same for graduation activities for the 4-year, 3-year, and 6-year high schools.

Would you, as the principal of your high school, send any material including articles that are related to promotion exercises for the junior high school and/or the 12th-grade graduation exercises to the NASSP, 1201 Sixteenth Street, N.W., Washington 6, D. C., not later than June 15, 1962?

SEARCH FOR EDUCATION SYMBOL

What does education look like? More specifically: How can the story of American education, its past, present, and direction toward the future best be symbolized in a statue or other artistic representation?

The American educator who comes up with the best idea for this symbol, which will be placed at the entrance to the Hall of Education at the New York World's Fair of 1964-65, will be awarded a trip around the world *via* Pan American Airways as a member of a travel tour of the National Education Association. A second award will be a nationwide air tour culminating in a visit to the fair and five other runners-up will be flown from their homes to New York to visit the fair.

The National Education Association (NEA) is cooperating with sponsors of the Hall of Education in the search for a symbol to depict the theme for that feature of the fair. Any educator (except NEA officers and staff members) may enter the search. After the winner has been selected, the sponsoring committee will commission an artist to execute the symbol.

Entries must include a typewritten description and a rough sketch of the symbol and must be limited to one side of a sheet of paper 8½ by 11 inches. Entries will be judged by the ideas they contain, not by the artistic quality of the sketch. They should include the name, address, and educational position of the entrant and should be sent to Hall of Education, Symbol Search, International Fair Consultants, 10 Columbus Circle, New York 19. They must be received on or before February 28, 1962.

The Hall of Education at the fair is planned as a pavilion of monumental proportions which will be erected on an attractively landscaped site in one of the central and more desirable areas of the fair grounds. It will seek to tell the story of learning in all its forms and the applied principles of universal education in a democratic society.

Attention will be given to the major new developments in the educational process, to public and private institutions of learning. The newest, most advanced concepts of school architecture, construction, and equipment will be shown and other exhibits will deal with curriculum development, teacher training, methodology of instruction, and many other aspects of the educational story.

Among the NEA educators on the Sponsoring Committee of the Hall of Education are William G. Carr, executive secretary, Finis E. Engleman, executive secretary of the American Association of School Administrators; and Frank W. Hubbard, assistant executive secretary for information services.

AN 8-YEAR STUDY OF ACADEMIC PREDICTION AND GROWTH

An eight-year study of academic prediction and growth, involving 40,000 students in 25 communities, was launched this fall under the joint sponsorship of Educational Testing Service of Princeton, New Jersey, and the College Entrance Examination Board, New York City. Dr. Scarvia B. Anderson, of Educational Testing Service, is directing the study. The study will seek to determine how academic growth, a major goal of education, varies with or is affected by characteristics of the school and experiences of the students. The study will also try to provide an answer to the question, "How early in his school career can the academic standing of a twelfth-grade pupil be accurately predicted?" Characteristics of students who drop out of school will also be studied.

This fall, public school pupils in grades 5, 7, 9, and 11, along with ninth-and eleventh-grade pupils in independent secondary schools, will take three groups of tests: *The School and College Ability Tests* (SCAT), *The Sequential Tests of Educational Progress* (STEP), *and Tests of General Information* (TGI). SCAT measures a student's aptitude for doing work at the next higher academic level. STEP measures achievement in mathematics, social studies, and science, and skills in reading, writing, and listening. The Tests of General Information cover specific facts which "an alert, informed adult could reasonably be expected to know." Facts not specifically taught in school are emphasized.

Except for those now in the eleventh grade, all students will be retested at two-year intervals. As students reach the twelfth grade they will take the Preliminary Scholastic Aptitude Test (PSAT) and achievement tests in social studies, English composition, and science where appropriate. These tests are administered by the College Entrance Examination Board.

To gain a more detailed picture of each student as an individual, Background and Experience Questionnaires will be administered, covering two crucial periods in educational development: from grade seven when the student is about 12 years old to grade nine when he first begins educational specialization, and from grade 11 when he begins making plans about specific colleges or jobs to the time of his high-school graduation. The questionnaire will ask about various environmental influences, how he spends leisure time, how he feels about school subjects, and what goals he has set for himself. An analysis of these factors may provide clues regarding relationships between outside influences—such as watching television—and academic growth.

The twenty-eight public schools participating in the study were selected to represent the four different geographical regions and seven different types of schools, varying in size and in the proportion of students going on to college.

In addition to the participating high schools, elementary and junior high schools which send a substantial number of pupils to these high schools will also take part in the project. Six outstanding boys' preparatory schools will provide information on growth from ninth through twelfth grades.

PUBLIC EDUCATION STATISTICS

The September 1961 issue of *School Life*, the official journal of the U.S. Office of Education, contains statistical data about our public schools for the school year 1959-60 (page 23). The following table includes data for the 50 states and the District of Columbia. These data are compared with data for the school year 1957-58. The figures for capital outlay do not include amounts spent by school housing authorities and nonschool agencies.

	1957-58	1959-60
Local school districts	47,623	40,286
1-teacher schools	26,227	20,263
Instructional staff	1,339,893	1,472,974
Enrollment:		
Grades K-8	25,800,246	27,629,881
Grades 9-12 and postgraduate	7,894,520	8,516,965
High-school graduates	1,338,465	1,627,060
Current expenditures	$10,424,145,000	$12,524,797,000
Capital outlay	$2,857,065,000	$2,659,484,000
Interest	$342,981,000	$459,238,000
Average annual salary of instructional staff	$4,703	$5,135
Current expenditure per pupil in ADA	$341	$376

SHAKESPEAREAN PAGEANTRY ON TV

The National Educational Television (NET) and Radio Center, 10 Columbus Circle, New York 19, New York, is presenting "An Age of Kings," a series of 15 television broadcasts. This program is presented in cooperation with Humble Oil and Refining Company, Public Relations Department, P. O. Box 2180, Houston 1, Texas. These 15 broadcasts depict the turbulent reigns of seven monarchs. This series represents one of the few times in this century that the connected historical plays of Shakespeare have been given a continuous, unified performance. A brilliant British cast has been assembled, and the same actors live out those parts that continue through several plays. The handsome, imaginative production is certainly television at its best.

"An Age of Kings" commends itself to a variety of publics. First, and foremost, it brings superb drama to the home audience for fifteen consecutive weeks, bringing to life the work of the greatest poet of the English language. Next, it is of inestimable value to students, whether they are interested in literature, in drama, or in history. Finally, it offers to educational institutions of all types a unique opportunity to enliven their teaching of Shakespeare with the immediacy and the impact which only the actual performance can convey. A paperback book, *An Age of Kings*, containing the text of the plays exactly as performed on the air, with synopses and introductions, is published by Pyramid Books and is available wherever paperbacks are sold or (in quantity) from

NET at the address above. *A Study Guide* is available from NET. This series will be presented at 8 different periods of dates. For a schedule of the times and listings of stations carrying this series, write to NET.

LANGUAGE LABS ARE INCREASING

Since the National Defense Education Act was passed, the use of language laboratories in the schools to teach foreign languages has increased sharply. There were only 64 language laboratories in high schools in 1958; today there are more than 2500. The United States Office of Education warns that teachers must be carefully trained to use these new aids if the school and the students are to get the most benefits. In a new study, the U. S. Office points out that teachers must be trained to use the equipment so that the student is helped to master quickly the foreign phrases and sentences of major use to him, and to develop the skill of thinking in the new language as a native of that language would think.

INAUGURATES DAYTIME NEWSCASTING ON TV

The CBS Television Network, which for so long has presented outstanding nighttime news and information programs, began this fall to extend this kind of programming to daytime television. Starting October 2, CBS will present a new daily morning program of features and news. Produced by the Public Affairs Department of CBS News, titled *Calendar*, the program will be telecast live, each weekday from 10:00-10:30 AM, New York time. (Check your CBS Station for local time.) *Calendar's* purpose is to open a window on the world—to let in the excitement, the fun, the sense and nonsense, and the day-to-day news of the outside world.

Calendar aims to try to fill a need deeply felt by all Americans—that we should know more about many things. It will call upon experts in all areas for information on their own specialties—in fact, fancy, service, and living. It will inform, but it will inform by entertaining. It will not pontificate. It will recognize that its audience is primarily composed of women, but it will address its audience as thinking people. Whether or not this program succeeds will depend on two factors: (1) its degree of distinction; and (2) the size of its audience.

THE NATIONAL GEOGRAPHIC SOCIETY SCHOOL BULLETIN

From the National Geographic Society this year comes a new and improved *Geographic School Bulletin*. It is designed to bring to students in the higher elementary grades, including the junior high school, a better understanding of their world—an undertaking never more important than today. At the same time, the *Bulletin* offers the same high standards of accurate, readable text and exclusive, instructive pictures which have aided millions of educators and students since 1922. First issue for the 1961-62 school year was October 2. A new, timely issue arrives each Monday for 30 weeks—with the exception of the Christmas and Easter holidays. This publication is obtained only by writing the School Service Division, National Geographic Society, Washington 6, D. C. Domestic subscription rate is $2.00 for the thirty issues, October 2, 1961, to May 14, 1962. To cover postage on foreign subscriptions, Canadian yearly subscription is $2.25; elsewhere, $2.50. United States subscribers may send

$5.00 and receive the next 90 issues (three full school years)—an offer that saves both money and the bother of annual renewals. Any teacher, librarian, educational worker, student, or parent may subscribe. Teachers may obtain subscriptions for all members in their classes, if desired, but in such cases the copies must be mailed in bulk to one address.

GUIDELINES FOR USE OF AUTO-TEACHING

The use of self-instructional programmed learning materials in teaching machines and similar devices represents a potential contribution of great importance to American education. But this contribution can be realized best only if users have information with which to evaluate self-instructional materials. Accordingly, the following interim guidelines have been prepared as a joint statement on self-instructional materials and devices by Committees of the American Educational Research Association, the American Psychological Association, and the Department of Audio-visual Instruction of the National Education Association.

1. Teaching machines do not, in themselves, teach. Rather, the teaching is done by a program of instructional materials presented by the teaching machine. Any evaluation of a teaching machine thus requires an assessment of the availability and quality of programs for each type of machine, as well as its mechanical dependability.

2. A variety of programmed materials is becoming available, but not all programs will fit all machines. Thus only those programs compatible with a particular machine can be considered as available for use with it. A list of commercially available programs and devices may be obtained from the Department of Audiovisual Instruction, National Education Association, 1201 Sixteenth Street, N. W., Washington 6, D. C. (cost 50 cents).

3. In evaluating the specific content which a self-instructional program purports to teach, the program can be examined to determine what the student is required to do and whether this reflects the kind of competence which the educator wishes to achieve. Like other educational materials, programs labeled with the name of a particular subject matter vary widely with respect to content and instructional objectives.

4. Just any set of question and answer material does not constitute a self-instructional program. One type of self-instructional material proceeds by small steps requiring frequent responses. These steps can be examined to see if they embody a careful, logical progression of the subject matter. Items in such a program are designed so that the student will respond to the critical aspects of each item or will perform the important operation which that item was meant to teach. Furthermore such programs generally provide a wide range of examples illustrating each principle or concept.

5. Self-instructional materials are designed to adapt to individual differences by allowing each student to proceed at his own rate. Some types of self-instructional programs further adapt by "branching" to alternate material. For this purpose, questions are designed to diagnose the student's needs and to provide alternate material suited to these needs. The material is designed so that the choice of answer to a particular question determines which items will be presented next. Incorrect answers take the student to items containing information designed to correct the error before continuing through the sequence.

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6. An important feature of almost all self-instructional materials is the record of the student's responses which provides a basis for revising the program. The prospective purchaser should ask about the extent to which revision has been based on student response and how the preliminary tryout was conducted.

7. The effectiveness of a self-instructional program can be assessed by finding out what students actually learn and remember from the program. The prospective purchaser should find out whether such data are available and for what kinds of students and under what conditions the data were obtained.

8. Active experimentation with self-instructional materials and devices in school systems is to be encouraged prior to large scale adoption.

INSTRUCTIONAL GUIDES BY IRS

The Federal Internal Revenue Service has again prepared teaching materials on filling out the income tax report. Included in this material is a kit entitled *Teaching Federal Income Taxes* manual, instructions for preparing the reports, and specimen forms. A special student kit has also been prepared for schools in rural areas. Two films are also available. They are *The Inevitable Day* (28 minutes) and *Since the Beginning of Time* (27 minutes). Order forms for this teaching material have been mailed to all high-school principals. Any principal who has not received this order form and who wishes to use this instructional material in his school should write to his District Internal Revenue Office.

CHANGE IN FEDERAL INCOME TAX FORMS

In an effort to improve individual income tax returns and make the instructions more meaningful, U. S. Commissioner of Internal Revenue Mortimer M. Caplin reports that individual taxpayers who are required to file 1961 Federal income tax returns will have two forms to choose from instead of three. A new two-page Form 1040 combines the better features of the first two pages of the 1960 Form 1040 and the discontinued Form 1040W. Page one of the new Form 1040 provides space for listing the sources of income, the computation of tax by either the Optional Tax Table or the Tax Rate Schedule, a listing of tax payments and credits, and a computation of tax due or refund. Page two provides a schedule for listing exemptions and various schedules for itemizing deductions. Those taxpayers who have previously filed on Form 1040W (7.5 million in 1960) will also be able to use the Form 1040 in 1961 in the same manner as they have used Form 1040W in the past.

Schedules for reporting various types of income which heretofore appeared on page 3 and 4 of the Form 1040 will be contained in a separate Schedule B for 1961. Therefore, this schedule and other convenient schedules need only be completed and attached to the Form 1040 by the small percentage of taxpayers whose income consists of income other than salaries and wages or receives dividends and interest in excess of $200.

There were very few changes in the simple punch card Form 1040A other than minor revisions for clarity and typography. Taxpayers with income of less than $10,000, which consisted entirely of wages reported on Form W-2 and not more than $200 total of dividends, interest, and other wages, are urged to avail themselves of this form. Over 62 million packages for delivery to individual taxpayers will be placed in the mails late in December. Every effort will be made to send each taxpayer the simplest form he can file.

She was teaching while this was being written

Yes, even report cards are turned out by the IBM system at Willoughby-Eastlake City School District, near Cleveland, Ohio.

In fact, IBM machines have taken several clerical chores off the shoulders of the teachers—giving them more time to teach.

Punched cards now produce attendance records, class scheduling, school bus scheduling, medical records. In addition, the IBM system does test scoring, payroll, retirement reports, sick leave accounting. As a result, records and reports are more accurate and up-to-date than ever before.

The Willoughby-Eastlake administration in this growing 10,000-pupil system now forecasts teacher and classroom requirements with great accuracy, thanks to the statistical analyses performed by the data processing equipment. Students get better service too, with course curricula and individual class assignments more accurately geared to student needs, abilities and performance.

Perhaps your school system can reap the same benefits. Your IBM Representative can tell you how IBM punched card equipment can help solve your information problems.

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GOALS FOR AMERICANS

A leaflet calling attention of librarians and trustees to the *Goals for Americans* program and suggesting ways libraries may cooperate in organizing discussion groups and other activities has been prepared for wide distribution among libraries by the Adult Services Division of the American Library Association. The program, being implemented nationally by the American Assembly, is based upon the report made to the White House by the Commission on National Goals which was appointed by former President Eisenhower. In addition to preparing the leaflet, the Adult Services Division is publishing a reading-and-film list for use in preparing for discussion and in providing further background for the individual reader of *Goals for Americans*.

The leaflet, designed for uses similar to those prepared for the White House Conferences, suggests a variety of activities through which the library can inform the community about this important report and can encourage community-wide discussion of the goals defined. The leaflet also provides specific information on materials of use in planning these activities. The leaflet and single copies of the list of background materials are available from: Adult Services Division, American Library Association, 50 East Huron Street, Chicago 11, Illinois.

A FULL DAY FOR THE TEACHER

So you think a teacher spends all of her time in the classroom teaching? A Rochester, New York, newspaper reporter found out when he interviewed elementary and high-school teachers that they devote a lot of time to non-teaching duties. A fifth-grade teacher told him she spent part of her time on the following things: collecting book rental fees twice a year; issuing receipts; keeping books; being responsible for funds received; keeping a detailed register of attendance; playing "banker" for pupils' savings accounts; collecting milk money; taking in contributions for the Memorial Scholarship Fund and Junior Red Cross; distributing tickets and collecting money for plays; reporting on religious instruction; evaluating new books; passing out PTA notices; bicycle registrations; baseball tickets; and attending meetings after school.

A high-school teacher told the reporter she did those things and a few more, besides. This was her list: checking absences; writing admissions to classes; reading office notices; sending from classes pupils requested by the school nurse or other school personnel; issuing notices on overdue library books; helping with school census; preparing monthly attendance reports; issuing bus badges and locker numbers; handling money in fund-raising projects such as candy, periodical, and yearbook sales; taking tickets at interschool games; serving on faculty committees; chaperoning class parties; putting in appearances at school plays and concerts; helping at parents' nights; attending faculty, department, and test committee meetings; ordering books; conferring with specialists about students; and working with cadet teachers. Both teachers, says the reporter, said wistfully they wished they had more time to teach.—*NEA Air Letter*

50TH ANNIVERSARY OF GIRL SCOUTING

On March 12, 1962, Girl Scouts of the United States of America will be fifty years old. Some 3,500,000 Americans across the face of the nation and in forty-nine foreign countries will celebrate that birthday . . . and the fact that in just half a century Girl Scouting has become a significant American symbol and tradition.

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In the public mind, Scouting is synonymous with good citizenship, with service to the community and the nation, and with the highest moral and ethical standards. In carrying out its public trust, the anniversary theme is "Honor the Past—Serve the Future." The success of Girl Scouting is due in no small measure to the remarkable support the organization has received throughout its history from countless millions of Americans in communities large and small, urban and rural, who have worked for it, contributed to it, served it.

Senior Girl Scouts (from 14 through 17 years of age) participate in specialized aide programs which provide not only service to their communities, but also opportunities for vocational exploration. Senior Girl Scouts may serve as library, museum, hospital, and nurse's aides; occupational therapy, child care and office aides; and international and public relations aides. There are also special interest Senior Scout Troops. These include Mariner Troops, Wing Scout Troops, International Friendship Troops, Trail Blazers, and Mounted Troops.

Girl Scouts of the United States of America sponsors an International program which gives both girls and adults an opportunity to learn about and live and work with sister Scouts in some fifty countries around the world. A special Fiftieth Anniversary project is Golden Blossoms. Girl Scouts throughout the nation will plant yellow flowers in village squares, hospitals, school yards, church and synagogue grounds, *etc.*, as a means of thanking their communities for their support of Girl Scouting and as a means of beautifying their communities.

REPRINTS OF ARTICLES ON PHYSICS APPARATUS

The AAPT Committee on Apparatus for Educational Institutions has prepared a volume of reprints of articles dealing with physics apparatus for lecture room and laboratory. The articles were originally published in the *American Journal of Physics* and its predecessor the *American Physics Teacher*. The Committee believes that physics teachers will want to be reminded of the existence of these articles and will find it convenient to have them within the covers of this single paperback volume of three hundred pages. The articles range in publication date from 1933 to 1960, in subject field from mechanics to nuclear physics, and in length from notes of a fraction of a page to review articles several pages long. The eighty articles included were selected carefully, but not exhaustively, as ones that seem to make a continuing contribution to physics teaching. Copies of the reprint volume at a price of $2.50 per copy can be obtained by writing to Department 10, American Institute of Physics, 335 East 45 Street, New York 17, New York. A check payable to the American Institute of Physics should accompany the order.

THE 1962 EDUCATOR'S AWARD

The Delta Kappa Gamma Society announces the Educator's Award of $1,000 to be given for the most significant contribution to education written by a woman between April 1, 1960, and April 1, 1962. This is the ninth Award offered by the Society. The first one, given in 1946, was won by Dorothy Canfield Fisher for *Our Young Folks*. The winner for the current biennium will be announced at the International Convention of the Delta Kappa Gamma Society in Philadelphia, Pennsylvania, August 1962. By offering this award, the Society hopes to encourage the high type of writing in the educational

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COMPARATIVE EDUCATIONAL ADMINISTRATION

by EDGAR L. MORPHET *and* THEODORE L. RELLER, *Both at University of California, Berkeley*

May, 1962 Approx. 480 pp. Text price: $7.95

GUIDING CREATIVE TALENT

by E. PAUL TORRANCE, *University of Minnesota*

April, 1962 Approx. 288 pp. Text price: $5.00

THE JUNIOR HIGH SCHOOL— Today and Tomorrow, 2nd Edition

by GERTRUDE NOAR, *National Director of Education, Anti-Defamation League of B'Nai B'rith*

1961 406 pp. Text price: $5.95

CURRICULUM PLANNING FOR THE GIFTED

by LOUIS A. FLIEGLER, *University of Denver*

1961 414 pp. Text price: $6.75

PSYCHOLOGY IN TEACHING READING

by HENRY P. SMITH, *University of Kansas, and* EMERALD V. DECHANT, *Fort Hays Kansas State College*

1961 470 pp. Text price: $7.50

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field which has been stimulated in the arts and sciences. Books must have been published prior to April 1, 1962, in order to be considered for competition. For complete information write to the Society, 416 West 12th Street, Austin 1, Texas.

EDUCATORS PUT ELECTRONIC EYE ON SCHOOL VANDALS

Recently, Chicago school officials figured vandalism costs at nearly $400,000 a year; New York's bill is even larger. Baltimore authorities spend $80,000 yearly just to replace broken glass; in Minneapolis the cost tops $50,000. In an effort to combat the increasing problem of school vandalism and theft, many schools are turning to modern electronic security devices, reports *Nation's Schools*, the magazine of better school administration. Electronic fences and motion-detection systems can sense even the slightest movement; long-range electronic eyes and ears watch and listen without tiring. When anything goes wrong, these silent sentries trigger an alarm automatically. And, as school authorities have discovered, one of the greatest values of a security installation is psychological. A burglar who knows an alarm will go off as soon as he tries to get inside a school will keep away.

STATE COMMITTEE DISCUSSES JUNIOR COLLEGES

The Post-High School Education Study Commission of Indiana met on September 21, 1961, to give attention to the possibility of the community junior college being one way of extending post-secondary educational opportunities in the state of Indiana. The group met on the campus of Vincennes University to secure information on how community colleges might fit into Indiana's education picture. AAJC Executive Director Gleazer met with the group as a consultant and resource person on national activities of junior colleges and their underlying philosophy. Main presentation of the group was made by Vincennes' president, Isaac K. Beckes, who heads the only publically controlled junior college in Indiana. John W. Hicks, assistant to the president of Purdue University, chaired the sessions. Meeting on the campus of Vincennes enabled the Commission members to experience personally how a community college operates. The group is making the study of post-high school education in Indiana authorized by the recent session of the Indiana Legislature.—*Junior College Newsletter*, September 25, 1961.

COLLEGE SCHOLARSHIP SERVICE

The College Scholarship Service is a cooperative activity of 389 participating colleges. Its primary functions include handling the confidential statements submitted by parents in support of applications for financial aid and serving as a clearing house of information for the colleges on scholarships, loans, and other forms of student aid. This Service is an activity of the College Entrance Examination Board.

The colleges using the Service share the belief that scholarships should be awarded to students selected on the basis of ability and promise, but that the amount of the awards should vary according to the financial need of the students and their families. The questions asked in the Parents' Confidential Statement are designed to bring out the information needed by the colleges to understand fully the family financial picture, and to make certain that financial

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aid can be awarded to those qualified students whose need is greatest. For full particulars about this service write to: College Scholarship Service, Box 176, Princeton, New Jersey or Box 27896, Los Angeles 27, California.

NEW SERIES OF FILMSTRIPS

Society for Visual Education, Inc., a major filmstrip producer, announces a new full-color release, "The Story of Handel's Messiah." Acknowledged as perhaps the world's greatest oratorio, the "Messiah" is a favorite Christmas vehicle of choral groups, vocal soloists, and audiences. The filmstrip re-creates in color artwork and narration the dramatic story of Handel's life and inception, completion, and introductory performance of this masterpiece.

Designed for youth age 12 and up, the new filmstrip is especially recommended by SVE for use in music education classes, but is stated to have a wide interest and appeal for almost any school or college group. The viewer gets a full insight into the composer's life, while the record accompanying the filmstrip highlights fifteen different selections of the music, including its many great choruses. Narration is by Maurice Copeland, of radio and TV fame.

Also available from the same source is a new filmstrip series on guidance entitled "Foundations for Occupational Planning." Objectives of the filmstrip series are to help the upper grade or junior high-school student to know himself and to realize that his unique characteristics are important to society. The study encourages a searching examination of the questions, each covered in a full-length captioned filmstrip, of: "Who Are You?" "What Do You Like To Do?"; "What Is a Job?"; "What Are Job Families?"; and "What Good Is School?" The student is helped to relate his own characteristics and needs to the world of work, and to weigh intelligently possible careers and the value of the amount of education he completes. Also presented are interests and hobbies as ways to enjoy oneself, while learning more about one's own individual abilities.

Other filmstrips include *Pathfinders Westward*, a new six-part series designed as a supplement to the teaching of American history at the fifth-grade level and up. This series describes one of the most inspiring periods in our national history. The story of the courageous pioneers and their hardships on the westward trek is sure to capture the student's interest and admiration, encouraging him to emulate the pioneer spirit in facing the new frontiers of the future; and, *The Night Before Christmas*, a new full-color sound filmstrip which is a presentation of Clement Clark Moore's classic first published in 1823.

A new edition of the *SVE Educational Filmstrip Catalog* contains descriptions of 1100 educational filmstrips—including over 200 new titles never listed previously. Of special interest are the descriptions of new releases pages 1-3, 32, 48-49 and the outside back cover. All filmstrip are described in the catalog and are classified and indexed under the following 7 heads: new titles, primary grades, primary-intermediate, intermediate, intermediate-high school, high school, and all grades. For descriptive literature about these filmstrips, write SVE, Department HAN, 1345 Diversey Parkway, Chicago 14, Illinois.

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who had spoken to more people, person to person, than any other man in the U. S. A. To maintain his tight schedules, he often used a private plane. On April 3, 1960, he, his wife, and their pilot were accidentally killed. In addition to all his other activities and his Youth program, Dr. Alexander was pastor of the First Christian Church of Oklahoma City and one of the country's best-known ministers. Before his death, he saw the Church of Tomorrow in Oklahoma City, his three-million-dollar dream become a reality on a 41 acre site. On 27 acres of it he was building the fabulous William H. Alexander Youth Center which he loved and was working so hard to complete.

The title of the two records are *The Will To Win* or *How To Achieve Your Goal* and *Are You Part of the Problem or Part of the Answer?* These two-sided 33⅓ microgroove long-play records were made by the Custom Record Department of the Radio Corporation of America and are priced at six dollars each, or the two for $11 with postage prepaid if payment accompanied the order. A total of $1.25 per record is paid to the Wm. H. Alexander Estate and to the Alexander Youth Center, for each and every record sold. These records may be played before any group or groups, no matter how large or how often, without paying an additional fee, but reproduction in any form, or use for TV or radio broadcasting is prohibited. Send order to Edward M. Miller and Associates, Inc., 518-24 McKay Tower, Grand Rapids, Michigan.

FILM AND FILMSTRIP CATALOGS

The Encyclopaedia Britannica Films Inc., Wilmette, Illinois, has released two film catalogs—*Films Incorporated* and *EBF Filmstrip*. Each item in each of these catalogs is annotated and shows the running time and, the age level for which it is suitable; and whether color or black and white. The films are available on a rental basis or for sale. The filmstrips are available only on purchase. These catalogs are available upon request at the address above.

A CATALOG OF SUPPLEMENTARY READING

More than just a "book list," this catalog offers a selection of some of the "best" in books for young people—kindergarten through senior high school. It has been designed with the educator in mind and includes remedial reading recommendations, NDEA recommendations, and social studies recommendations. It also contains complete detailed information about every title included; *i.e.* subject area, grade level, library recommendations, *etc.* Categories include books on science, foreign language, music, biography, series for growing minds, research, stories, *etc.* Copies of this *1962 Annotated List of Books for Supplementary Reading* are available *free* to superintendents, principals, and librarians, if requested on official letterheads; otherwise, 25¢ each. Write to Materials for Learning, Inc., Department 62, 1078 St. John's Place, Brooklyn 13, New York.

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lithography plant, tracing the production of a specific four-color printing job from start to finish. Informative as well as entertaining, the movie is of special interest to art directors, vocational schools, consumer organizations, and other groups that want to know what photolithography is and does. The film is available for group showings free of charge upon written request to Audio-Visual Services, Eastman Kodak Company, Rochester 4, New York.

CHEMISTRY LABORATORY TECHNIQUES

This is advance information about a film series that has just been completed. In the school chemistry laboratory the instructor is always on the alert that the student acquire the skills to handle apparatus and chemicals correctly and safely. *Chemistry Laboratory Techniques* is a series of *eleven* sound and color films which deals with elementary chemistry for high schools. They were produced in consultation and with the approval of Maurice U. Ames, Assistant Superintendent of Schools, formerly Supervisor of Science in the New York City Schools. The demonstrations are made by a professional laboratory technician and from the viewpoint of the student facing the bench. These new films are available for acquisition under Title III of the National Defense Education Act.

Each film concentrates on one piece of apparatus or a chemical. The film shows both the correct and the incorrect way of working and is pedagogically sound in its approach. The correct technique is repeated in slower motion. By means of these repetitions in large close-ups, the student can see distinctly how to manipulate his tools and materials; and since the positions of the hands on the screen is similar to the right- and left-hand movements of the student, he can participate vicariously in the demonstrations. These demonstration films should help the chemistry instructor in teaching the student these necessary manipulative skills and also help to avoid accidents in the laboratory. For complete information write to Robert Disraeli Films, P. O. Box 343-Cooper Station, New York 3, New York.

A KIT ON MAGNETISM

Science Education Products Company, 2796 Middlefield Road, Redwood City, California, has revised and improved its popular *Magnetism Kit*. It is one of a series of ten related kits used for teaching electricity and magnetism in grades four through nine. In the new kit, parts are larger and easier, to manage. New questions and experiments catch pupils' interests and lead them to discover the laws of magnetism themselves. There are nine areas of investigation with enough activities in each to keep an entire class busy. These areas are: Attraction and Repulsion, Magnetic Materials, Magnetic Field, Make a Magnet, Magnetic Compass, Electricity Produces Magnetism, Make an Electromagnet, Magnets Produce Rotation, Make an Electromagnet Motor, and Electromagnets Push and Pull. An new eight-page instruction manual is written in a simple vocabulary. Eight photographs of demonstrations are large and clear. A discussion of what causes magnetism and the method of making magnets is provided for the teacher.

Packaging has been improved to simplify storage. A pad of requisitions lists all parts so the contents may be quickly checked by pupils and replacements ordered. Magnet wire is the only consummable included. This *Magnetism Kits* is priced at $21.50.

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The two parts of *And No Bells Ring* are designed to be played together as a full 57-minute program or separately, 28½ minutes each. Both 16mm sound films and television tape recordings are available and cleared for all non-commercial uses, for group showings, and television.

These films were first shown at the Portland NASSP convention, but they were not generally available until last fall. Many principals have found them valuable in stimulating discussion among lay and professional groups in their communities. They were not designed to give final answers, but rather to raise questions. The NASSP presents them as another tool which principals can use to provide leadership in improving instruction.

To order the films write to: National Association of Secondary-School Principals, 1201 Sixteenth Street, N. W., Washington 6, D. C. Enclose $3.00 rental charge for handling one or both films, or we can bill you. Give preferred program dates (please make 3 choices) and the number needed of the free supplementary guides, "New Directions to Quality Education."

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District of Columbia Association of Secondary-School Principals—*Boise L. Bristor*, Board of Education, Ross Administration Annex No. 1, Washington 9, D. C.

Florida Association of Secondary-School Principals—*E. B. Henderson*, Secretary-Treasurer, Florida Education Association, 208 West Pensacola Street, Tallahassee, Florida.

Department of Secondary-School Principals, Florida State Teachers Association—*Gilbert L. Porter*, P. O. Box 1331, Tallahassee, Florida.

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Massachusetts Secondary-School Principals Association—*Frederick H. Pierce*, Executive Secretary, 3 Broadway, Beverly, Massachusetts.

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Mississippi Association of Secondary-School Principals—*Harrison Ellzey*, Principal, High School, Box 466, Collins, Mississippi.

Missouri Association of Secondary-School Principals—*Leroy C. Amen*, Principal, Lindbergh High School, 4900 S. Lindbergh Boulevard, St. Louis 26, Missouri.

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New York City Junior High-School Principals Association—*Maurice Mehlman*, Principal, Andries Hudde Junior High School 240, Nostrand Avenue & Avenue K, Brooklyn 10, New York.

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New York State Association of Secondary-School Principals—*T. Walsh McQuillan*, 152 Washington Avenue, Albany 10, New York.

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Oregon Association of Secondary-School Principals—*John S. Conway*, Director, Secondary Education, State Department of Education, Salem, Oregon.

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South Carolina Association of Secondary-School Principals—*E. M. Culpepper*, S. C. Assn.-Sch. Administrators, 1510 Gervais Street, Columbia, South Carolina.

South Carolina High-School Principals Association—*C. C. Woodson*, Principal, Carver High School, Spartanburg, South Carolina.

South Dakota Association of Secondary-School Principals—*George W. Janke*, Principal, Senior High School, 410 East 5th Avenue, Mitchell, South Dakota.

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Texas Association of Secondary-School Principals—*Pat Woosley*, Principal, Highland Park Junior High School, 3520 Normandy, Dallas 5, Texas.

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Virginia Department of Secondary-School Principals—*Clarence H. Spain*, Principal, Binford Junior High School, 1701 Floyd Avenue, Richmond 20, Virginia.

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Wisconsin Association of Secondary-School Principals—*Harold L. Paukert*, Supervising Principal, Kohler Public Schools, 230 School Street, Kohler, Wisconsin.

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